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Use of Information Technology Approach in Teaching-Learning Process

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ABSTRACT

The purpose of the present study is to find out the difference between the mean scores of Experimental group which was taught through self instruction module of information technology approach and conventional method administered on control group. Data collection module/lessons were prepared by investigators to measure achievement scores in Information Technology. The sample was selected randomly from the two sections of class 6th students of New Bright Public School,Rohtak. It consisted 30 students of experimental group and 30 students of control group. To measure the significant difference't' test was applied. The study reveals that the self instruction module prepared by investigators oral, print and electronic media i.e. power point presentation (ppp)is effective. The students of experimental group scored better as compared to control group. Thus self instruction module of information technology approach shows immense impact on learning of students. Teaching through this method is very helpful to develop the knowledge and understanding domain of all kind of students i.e. having different and varied abilities. This approach is very helpful to teachers as well as students. It was found that students took interest in teaching learning process and they did not hesitate to clarify their concepts.

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INTRODUCTION

Technology is very useful and essential in the field of education. Educational technology helps teachers as well as students to perform and understand their task in effective and efficient manner. Educational technology, the science and technology of teaching and learning. It has evolved and devised various techniques, strategies and approaches for both teacher and learner to realize their teaching learning objectives in a quite effective way. Information technology approach represents one of such strategies and approaches to improve the process and outcomes of teaching-learning. In information technologyapproach, the teaching process is carried out through a number of media by using them in such a planned and organized combination with reference to the available teaching-learning situation as to have their utmost utilization for achieving the desired ends in a quite effective way.Computers have widely utilized in the business enterprise, education and learning as well as communications technologies, it offers in addition excelled in sustaining an important part inside educational processes. Computer systems have become common as they are nowadays economical, compact in size, a lot more versatile and simpler to handle plus as a result of these pcs have become more desirable to educators due to their enormous abilities and substantial efficiency (Dhaif, 2004).. PCs are now so desirable that one feels out-of-date if you are not utilizing those personal computers (Moras, 2001). This has been discovered that the pc encourages graphic, communicative as well as kinesthetic learning; high- level reasoning and problem resolving (Turnbull &Lawrance , 2002) .This provide instant suggestions, hands-on training and collective instructions (Becker, 2000; Smith 2008; Zapata, 2004). The unique feature of the computer being a method for the education is actually its ability to push by using the scholarly person. Publications as well as recording might inform students exactly what the concepts area unit and just what the appropriate possibilities area unit, still they could not really evaluate the specific error the scholarly person has generated and respond throughout a manner which guides him or her not really entirely to fix his or her mistake, nevertheless in addition to understand the concepts regarding the proper solution

(Nelson, E.; Ward, .H. and Kaplow R., 1976: 32). Information technology is media that utilizes a mix of various content forms displayed or accessed victimization computerized or electronic devices. In Education, transmission resources enable the user to travel through a series of displays, text and associated illustrations a few explicit topic in varied data formats. Learning theory within the past decade has enlarged dramatically attributable to the introduction of transmission leading to the event of specific areasof research(e.g. psychological feature load, transmission learning).ideos and also audio in to one particular type. the feature of transmission and the internet lays inside the technique where information is associated. Transmission and the web require a completely brand new way of composing. There exists a increasing system of research which use ICT in the class can easily improve learning (Meiers, 2009). Computer-based information technology training conditions - comprising pictures, textual content and audio - provide a possibly effective establishing for boosting student learning. Probably the most significant benefits in student attainment tend to be attainable in which the utilization of ICT is actually prepared, organized as well as incorporated efficiently. Additionally, educators should be conscious that there are occassions when the usage of ICT is suitable for a specific process along with other instances when another multimedia are far more appropriate(Meiers, 2009). In information technology approach it is very difficult to prescribe a uniform pattern or instructional procedure to be followed by the teacher and learners. Every teaching-learning situation is an unique opportunity which demands a set of unique preparation and implementation activities on a part of the teacher and students with regard to the adoption of information technology approach. However there may lie common points of arguments if we try to analyze the very nature and goals of information technology approach as cited below:-

- The teaching learning objectives are to be effectively realized.
- Teacher must be helped to plan and organize his teaching activities as effectively as possible.
- The learning experiences should be organized in such a way that students learn mostly through self effort and active participation and involvement in the learning activities.
- Teaching-learning activities need to be organized in such a way as to help the teacher in making the total unit of learning quite clear to his students as well as to help the students in acquiring all the learning experiences in a wide way through independent efforts and cooperative learning.
- The media selected for the learning activities should be such that these may be coordinated and combined in relation to a particular teaching learning situation resulting in the effective realization of the set objectives.

Keeping the above cited nature and demands for the use of information technology approach we can follow a particular pattern in the form of following stages and steps for the organization of the instructional activities with references to the different teaching-learning situations.

First stage. At this stage teaching-learning activities are to be initiated by the teacher. A well prepared lesson may be delivered by the teacher on a learning unit by keeping in view the set teaching-learning objectives. Here he may use different media. The learning contents may be covered in a global way through lecture, question answer or lecture-cum-demonstration method etc. He may make use of the black-board charts, pictures, graphs, models, slides, audio and video tapes, exhibit actual objects and demonstrate experiments etc. for the clarity of the contents of the learning unit depending upon the demands of teaching-learning situations.

Second stage. It is the stage for the demonstration of specific and specialized unit. This information may be provided to him through well prepared programmed learning material, tapes and video recorded material, learning guides and work-books etc.

Third stage. At this stage the learner is provided with the essential help and individual guidance for the clarity of the steps and activities under taken by him for proceeding on the path of his learning. The activities undertaken for the purpose are following:-

Instruction and discussion with teacher or the fellow students

1. The extra help and individual guidance by the teacher or subject expert.
2. Observation of experiments and work activities performed by the teacher,expert or fellow students
3. Close observation of recorded material

Fourth stage. This stage is meant for carrying out the learning activities on the part of leaner in details, depth. Here the students may be asked to do study in library with necessary reference material or to have detailed study from text books and computer assisted instruction.

Fifth stage. This stage is meant for the integration of the theory with practice and learning practical use of curricular experiences. For this students must engage themselves in laboratory work, manual work, field work, workshop experience, creative activities depending upon the nature of learning unit.

Sixth Stage. At this final stage teaching-learning activities are arranged on a superior level. The activities at this stage are of nature like:-

- Group discussion and change of ideas through seminars, symposium, panel discussion and conferences etc.
- Critical thinking and analysis on the basis of independent writing, experimentation and creative work.
- Critical evaluation of one's, own achievement on the accomplishment of others in constructive way

In this way, different media can be utilized in combination at the subsequent stages and steps of the teaching-learning activities carried out for the instruction of a particular learning unit.

This information technology approach is equally applicable to other informal and non-formal teaching-learning situations including correspondence or distance education. A distance learner may get well prepared lessons on the related unit. This learning material may be available in the shape of programmed learning. The students may be asked to interact with resource persons available at the different resource centers for clarifying their doubts and difficulties related with the learning method. The help of mass media may also be taken for helping distance learners. The media like CCTV, teaching machines and computer assisted instruction may also provide beneficial to the individual learning. The individual learner may be asked to evaluate their own learning outcomes. They may take the help of the media like labs, information centers, libraries etc. Personal contact programmers may be arranged for providing them formal teaching-learning experiences at the different resource centers created for them at their convenience Information technology approach its studying or has its strong appeal and applicability to almost all the teaching-learning situation for the teaching and learning of the different curricular or non-curricular subject material. It is beneficial for all types of learners, whether average, sub-average or above average. On the one hand where it can very much be used in diagnostic and remedial teaching for the educational backward and slow learners, on the other, it may be equally planned for the organization of teaching learning activities for the gifted and creative genius. The techniques used for information technology approach with the creative children may be outlined as below:

a) Guidebooks and workbooks for the use of teachers and students
b) Idea books which includes exercise for developing intellectual skills involved in creative thinking. Invitation to thinking and doing, plots, puzzles and plays.
c) Carefully prepared instructional material consisting of recorded planned sequences of creative thinking activities like great movements of discovery, great movements in inventions etc.
d) Use of large variety of audio-visual aids available for creative teaching in the form of recorded audio and video tapes, colored slides, films, computer assisted instruction material etc.
e) Use of package teaching learning programme consisting of material like instructor manual, volumes return on different aspects of creative teachings, posters, pictures, tapes of audio and videos, teaching learning strategies material etc.
f) Use of auto instructional programme specially meant for creative education like set of creative problems in the form of detective mysteries presented in a suitable self instructional format or programme text and computer assisted learning material prepared on the different phases of creative process.
g) Use of different techniques like attribute listing brain storming, morphological analysis and psycho-dramatic approaches like role playing, enquiry training, word association etc.

RELATED LITERATURE

Mayer and Moreno (2002) reveal a intellectual concept of exactly how learners plan information technology facts. This particular concept may be used to assist educators to evaluate as well as choose the best information technology sources for the learning in the class. Probably the most significant benefits to student attainment are attainable in which the usage of ICT is actually organized, planned as well as incorporated efficiently. Additionally, educators should be conscious that there are occassions when using ICT is suitable for a specific process alongside instances when various multimedia are far more correct. Meiers (2009) Generally there is really a increasing system of research which use ICT in the class can easily boost learning .Computer-based information technology training conditions - composed of pictures, textual content as well as audio - provide a possibly mighty environment for enhancing pupil knowledge.

Nevertheless, almost all information technology sources may not be equally excellent, and so the obstacle educators deal with is exactly how to evaluate and choose information technology sources which best improve significant learning. Exactly how are we able to utilize content and pictures to assist students discover the life span reports of important native figures, study the way the vocabulary and methods of filmmaking tend to be utilized to determine stories, discover the attributes of scatter plot chart, check out the qualities of right angled triangles in order to estimate unidentified levels, much better comprehend the present model of the planet's construction or perhaps fix an item layout brief?

SIGNIFICANCE OF THE STUDY

Teachers' skilled developments activities continually specialize in those sorts of teaching methods that facilitate students improve beside their path of learning method. Because the analysis has been designed to find the effectiveness of presenting subtitles on the flicks on vocabulary acquisition and content comprehension, it'd be of abundant significance if confirmed that this strategy works. Typically speaking, it additionally also can be resulted that the finding of this analysis also may be more to the body of teaching, learning and use of transmission technology information. The findings of this study will be share with the info designers, ESL academics for the technology to be enforced within the schoolroom, materials developers for learning the data Technology.

OBJECTIVES OF THE STUDY

The objectives of the study were following:

- To remove the difficulties of the learners through practice exercises and clarity of concepts by the investigator.
- To study the factors that may have caused unsatisfactory achievement in learning the Information Technology.
- To know the areas of weaknesses of pupil's achievement in learning the Information Technology.
- To study the effect of Information technology approach in the learning of Information Technology.

HYPOTHESIS

The hypothesis of the study was as follows:

"There will be no significant difference between the mean achievement scores of the students of Information Technology taught through Information technology approach vis-à-vis traditional method".

METHODOLOGY

Sample

60 students of two sections of class 6th students of New Bright Public school, Rohtak were selected as sample of the study. The average age of students was 11+ years.

Design

Stage	Experimental Group	Control Group
1. Pre-test	Measurement of pupils achievement in Information Technology.	Measurement of pupils achievement in Information Technology
2.Treatment	Teaching through Information technology approach	Teaching through Traditional Method.
3. Post-test	Measurement of Pupils achievement through achievement test.	Measurement of pupils achievement through achievement test.

Tool

The following tools and techniques were used for the present study:

I. Self Instruction Module prepared by investigators oral, print and electronic media i.e. power point presentation (ppp) etc.
II. Contents : charts ,power point presentations, exercise etc. (prepared by the investigator).

Statistical Techniques Used

Means, S.Ds. and t-Test were used.

TABLE 1: TABLE SHOWING MEAN, S.D., $S.E_M$ AND T-VALUES OF PRE -TEST ACHIEVEMENT SCORES OF CONTROL AND EXPERIMENTAL GROUP

df=58

	N	Mean	S.D.	$S.E_m$	't' value
Cont .Group	30	32.15	9.91	3.06	0.16
Exp. Group	30	32.65	6.89		

It is observed from table 1 that the value of 't' at 58 degrees of freedom is found 0.16 which is not significant at 0.05 level of significance. This means that the mean score in pre-test of experimental and control groups do not differ significantly. The achievement of both the groups arenear by same.

TABLE 2: TABLE SHOWING MEAN, S.D., $S.E_M$ AND T-VALUES OF POST -TEST ACHIEVEMENT SCORES OF CONTROL AND EXPERIMENTAL GROUP

df=58

	N	Mean	S.D.	$S.E_m$	't' value
Cont .Group	30	32.24	9.30	2.93	2.18*
Exp. Group	30	38.64	6.8		

*Significant at 0.05 level of significance.

Table 2 depicts that the 't' value at58 degrees of freedom is found 2.18 which is significant at 0.05 level of significance. This means that the mean score of experimental group (38.64)is higher than the mean score of control group (32.24). This indicates that teaching through information technology approach is effective.

TABLE 3: TABLE SHOWING MEAN, S.D., $S.E_M$ AND T-VALUES OF GAINS OF CONTROL AND EXPERIMENTAL GROUP

df=58

	N	Mean	S.D.	$S.E_m$	't' value
Cont .Group	30	1.54	1.17	1.67	3.16**
Exp. Group	30	6.84	8.01		

** Significant at 0.01 level of significance.

A scrutiny of table 3 indicates that the 't' value at 58 degrees of freedom is found 3.16 which is significant at 0.01 level of significance. This means that the mean gain score of experimental group (6.84) is higher than the meangain score of control group (1.54). This indicates that experimental group attain higher gain score as compared to their control group counterparts.

TABLE 4: SHOWING SIGNIFICANCE OF DIFFERENCE OF MEAN GAINS SCORES OF PRE-TEST AND POST-TEST OF EXPERIMENTAL GROUP

df=58

	N	Mean	S.D.	$S.E_m$	't' value
Pre-Test	30	32.65	6.89	2.49	2.40*
Post-Test	30	38.64	6.80		

*Significant at 0.05 level of significance.

It may observed from table 4 that the 't' value at 58 degrees of freedom is found 2.40 which is significant at 0.05 level of significance. This means that the mean gain score of Post-test (38.64) is higher than the mean gain score of Pre-test (32.65). This shows that mean gain scores of Post-test and Pre-test differ significantly.

TABLE 5:SHOWING PERCENTAGE OF TYPES OF ERRORS MADE BY EXPERIMENTAL GROUP IN PRE-TEST AND POST-TEST

Types of errors	%age of item	%age of errors in pre-test	%age of errors in post-test
I	23.1	40.7	24.6
II	26.9	38.7	14.08
III	8.6	41.5	18.6
IV	16.3	39.5	18.4
V	9.4	49.5	20.6
VI	15.6	56.5	10.9

INDEX:

1) Errors concerning Computer Language: Machine Language, Assembly Language, High Level Language and Fourth Generation Language.
2) errors concerning Windows Media Player, Displaying Two Windows At Time, Exploring Pictures, Disk Cleanup, More on Windows 7.
3) Errors concerning Creating a Mail Merge Document, Creating Recipient List, Inserting Merge Fields, Viewing the Merged Data, Printing your Letters.
4) Errors concerning Microsoft Power Point 2007.
5) Errors concerning Animating Text and Object.
6) Errors concerning Microsoft Excel 2007.

Table 5 clearly depicts that the Percentage of errors of all types decreased considerably in the post test which may be attributed to the treatment provided to the experimental group by the investigator through information technology approach.

CONCLUSION

On going through the above results it is concluded that the students taught through Information technology approach exhibited better results in post test. There is a sharp decline in the number of mistakes made by the students of experimental group who were taught Information Technology through Information technology approach. This explains effectiveness of Information technology approach. Teaching through this method is very helpful to develop the knowledge and understanding domain of all kinds of students i.e. having different and varied abilities. This approach is very helpful to teachers as well as students. It was found that students took interest in teaching- learning process and they did not hesitate to clarify their concepts.

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