

Original Article**IMPACT OF INFORMATION TECHNOLOGY ON THE EVER
CHANGING TEACHING-LEARNING PROGRAMME
(A Case of Technology Faculty Students, Jimma University).
(M Ranga Reddy) *****ABSTRACT:**

Now-a- days, the way of learning is being changed slowly from traditional methods(Teacher-oriented methods) to modern methods(Student-oriented methods). The student-oriented instruction method is based on the intensive participation of students on the Teaching-Learning programme supported by latest available Information Technology. But shortage and usage of Information Technology materials is the current problem to student community to achieve desired goals. This paper deals with impact of information technology over the Teaching-Learning process in general and particularly in the Technology Faculty of Jimma University. The study is set to find out how Jimma university Tech. Faculty students are improving their studies with available latest information technology materials and to know awareness of students towards the usage of advanced teaching-learning materials. Data was colleted through a well-designed questionnaire from sample students. Statistical and other Techniques are used to analyze the data. Analysis and Results are drawn using the various statistical Methods. Conclusion, discussion and Recommendations have been made from research findings of this paper. we conclude that Technology students of Jimma University have no awareness of impact of information technology on their studies.

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INTRODUCTION: Generally, education is a tool to develop humankind in so many ways. Therefore, education is being given to students by different methods . Among them, the most important one are teacher-oriented instruction and student-oriented instruction. The aim of any method /practice is to make the learning process most effective. The current trend is more from a teacher-centered to student-centered instruction. Teacher can use computers to manage the whole institutional process from lesson plan to evaluation of students' performances. Refresher courses and workshops on the effective teaching with modern available information technology are useful only when they have been learned and implemented in the real class-room. Teacher should devote a great deal of time in preparation and follow-up. Teachers in such a system have little to do in the class room unlike in that of the traditional method of teaching, as learners carry out most of the tasks. According to the Mary(1997)[1,2] the potentiality of CAI to general thinking and problem solving skills

was better than what the traditional class used to be. In general, it was shown that students with CAI developed program have higher problem solving skills than those without CAI

In general, in the interactive learning environment, it is the learners who perform most of the activities and the teachers facilitate the process and provide guidance. There are quite large number of computer software designed to enhance the learning process namely. Computer Assisted Instruction (CAI), Computer Based Instruction(CBI) and Computer Based Learning (CBL). Among them CAI is the most interactive method.

This method provides instruction with or without the involvement of the teacher. CAI has three major characteristics namely interaction, flexibility and capability, which meet the students needs. These characteristics of interaction in the learning environment chiefly implements favorable ways of teaching-learning which human teachers couldn't perform. The computer is the only tool in the hands

of both students and teachers. The effective use of this tool in the teaching learning process depends on the skill and interest of both teacher and student at various instances of learning. The result of computer based instruction in the teaching-learning process is described as the result of collaboration between the teacher, the student, the designed technology and technology oriented instruction. Students can use computers and its related materials for different purposes in their studies. According to PeterTorkman [3], it has strong impact on the many aspects of our every day life. The possibility of using various IT tools in learning environment raises new questions with in the education system. The author felt that it is very important to distant learning students.

.According to White (1997), (in the PeterTorkman) the incorporation of the computer in to social studies was most effective when teachers were well trained and prepared to spent extra deal time to make the computer based program work.. Reglin(1990) (in the PeterTorkman) studied the effects computer assisted instruction (CAI) in teaching of

Mathematics on the sample of 53 minority prospective teachers. The main finding was the teaching was more effective. According Moor and Zaskis (in the PeterTorkman) social interaction is not only important to develop social skills of the students in general and particularly they need small group learning for effective training. They also told that full utilization of IT education and computer may develop effective, enriching learning experiences for students.

Inpat T.K (2003) (in the PeterTorkman) expressed that IT should be used to complement human The style of learning of engineering has been completed changed due to advancement of information technology tools. IT tools has enhanced the speed and accuracy of computations, but canned software reduces the importance of other programmes. If packages are the primary tools for computation, advanced applications involving macro and scripts all requires fundamental knowledge of programming and algorithm structure. The student should learn how to perform these tasks technically. Preferably the students would be given opportunity to

explore software themselves with help of an instructor when need.[4,5,6]

The aim of education in the Information age is to help students in their studies by the available information technology. Also it helps teachers to incorporate computer controlled technology into the educational curriculum. Several methods have been developed in different times to facilitate the effective learning motivation. However, the use of computer based systems should become second nature to teacher like using the chalk board [7]. Information Technology can be referred as any form of components which are useful in the creating , processing and transformation of information. The software and hardware technologies are main buildings of IT Wakshun Mekonnam(2001) (8) [] had referred the IT, in his paper the potential of information technology in the education, as employing of information technology tools like computers, on-line system, video camera, software applications in the teaching learning process. He also had referred Simonsm and educational planers have to imagine the ways in which computer can be used to foster the learning

and Thompson (1997) (in the mekonam) view such a system as constructive learning environment that allows learners to engage in the real world activities.

According to Mulder(1997) [9,10] defines educational Technology as the systematic application of human and technological resources in the teaching-learning programmes. Like wise the National Science Foundation Workshop(1996)9in the mulder) described IT in the education as computing infrastructure and communication infrastructure. In this context, IT encompasses all means that are useful for the dealing of knowledge in the educational system. The computer is a general purpose machine. Alan(1937) (in the Moulder)demonstrated it as a “Universal Machine”, and it has become a useful tool for a diverse set of teaching related tasks from monitoring attendance of students to simulating the experiments in the laboratory. However, time has come to use computer and its related educational software to general education process by teacher. Students are easily motivated when they have information

The objectives of study were to find out how IT materials are being used to make teaching learning process effective. It is also useful to all concerned academicians as indication to follow effective methods by using all aids. The research findings may be useful to student community by keeping them ready to use all available IT materials in their studies.

The statement of the problem is, how advanced teaching materials are being utilized in the Faculty of Technology, Jimma University. It was designed to know the awareness of JUTF students towards the impact of information technology over the their education. The study was conducted during the period of November and December, 2005

METHODOLOGY: The subjects of study were year II and above Technology faculty students of Jimma University. Simple and proper questionnaire, intended to collect data from target sample, was prepared. Sample size of 183 has been fixed from population of 1320 using the formula,

$$n = \frac{z^2 pqN}{Nd^2 + z^2 pq}$$

where N= population size, n = sample sized=,005 at 1.96

level of confidence intervals.

in the Technology Faculty of Jimma University.

The study was set mainly to know how information technology is being utilized in the Teaching Learning process generally

Main study variables were

1. Learning through the latest available information technology equipment.
2. Use of computer Laboratory/software for different purpose of learning.
3. Improving studies using on-line library facilities/Internet.

And having the hypothesis that Technology Faculty of Jimma

University students have no awareness over the impact of information technology on their studies.

In connection with the above aim, questionnaire was designed to collect the data from the sample students, which were selected using the simple random sampling. Questionnaire was distributed

to all 183 sample students, but only 164 students have responded to questionnaire. The collected data is analyzed using various statistical techniques.

Key Word: IT= Information

Technology JUTF = Jimma University

Technology Faculty. CAI = Computer

Assisted Instruction. CBI = Computer

Based Instruction. CBL = Computer
Based Learning

RESULTS

The analysis and results of the summarized data was analyzed using Chi-Square, Graphical and other statistical methods. Here, there are four cases.

Table 1 number of Students subject to accessing IT materials for their study

	Y1	Y2	Y3
X1	60	70	75
X2	70	62	60
X3	30	24	20

Variables: X1 = Low rate user students.

X2 = Normal rate user students.

X3 = High rate user students.

Y1= Learning through available modern information technology.

Y2= Use of software/computer Laboratory for different purpose of learning.

Y3= Improving studies using on-library/Internet

Case 1. The collected data regarding utilization of available information technology in the class-room was analyzed. Still some students in the

Technology Faculty of this University are not getting of benefits of Advanced Teaching materials in their learning process. From this diagram, we observe that normal rate users of advanced facilities are more than high rate users

Learning through available modern information technology.

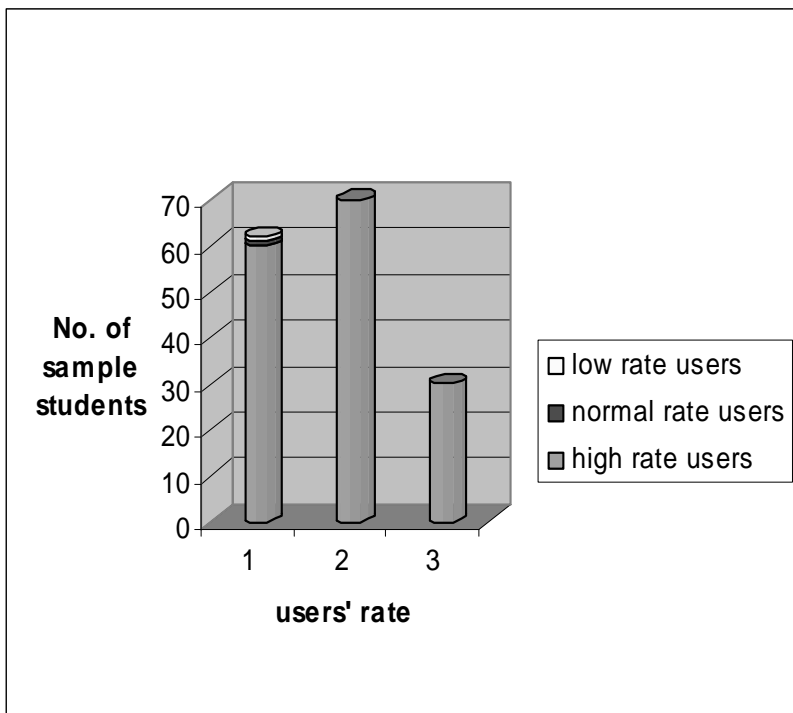


Figure 1

Case ii: the collected data in connection with support of computer lab/software application in the learning process of Technology Students was analyzed with help of CONE Chart. This figure show low rate users of Laboratory/Software for their studies are more than normal rate users and high rate users are very few only.

Case iii: The result relating the variable utilization of on-line library /Internet was analyzed through Pyramid chart. This figure shows clearly only few students from technology of this university using on -line/Internet services for their studies.

Case iv: The collected data was analyzed by Chi-square Test with null hypothesis that JUTF students have no awareness regarding impact of it education over their studies.

Use of software/computer Laboratory for different purpose of learning.

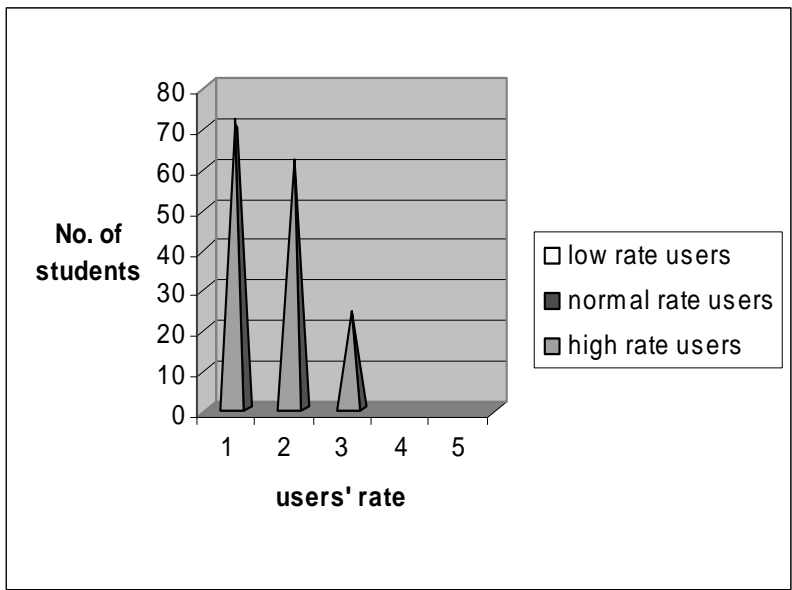


Figure 2

Improving studies using on-library/Internet

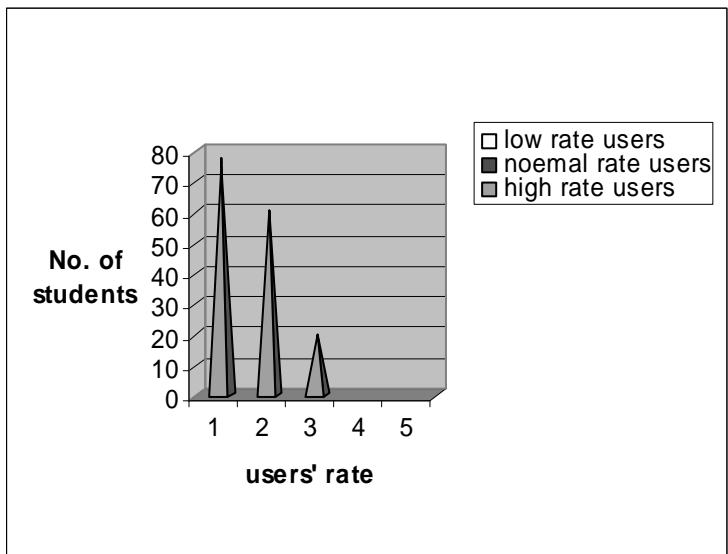


Figure 3

	Y1	Y2	Y3	Total
X1	60	70	75	205
X2	70	62	60	192
X3	30	24	20	74
Total	160	156	155	471

Table 3 Expected frequencies

	Y1	Y2	Y3
X1	70	67	67
X2	65	63	63
X3	25	24	24

$$\chi^2 - Testvalue = \sum \frac{(O_{ij} - e_{ij})^2}{e_{ij}}$$

where

O_{ij}= data frequencies

e_{ij} = expected frequencies.

$$\chi^2 - Testvalue = 1.428 + 0.1343 + .9552 + .3846 + .0158 + .1428 + 1 + .6666 = 4.7273$$

$\chi^2 - Testvalue$ Table value at 95% level of significance with 4 d.f = 9.841

The calculated value is less than the table value. The assumed null hypothesis

is accepted. i.e JUTF students have no awareness of effect of information technology on their studies.

Discussion: With our experience, we know about the role teacher and his/her teaching in the Teaching –Learning process of educational system. Most of Academicians have called this time as age of information technology. It is noticed that the available information technology

Materials for educational system are helpful to the teaching community at all levels. It is observed that many kinds of educational software/packages are available to make learning effective. Because of this, an individual teacher

gains a great deal of extra efficiency by using available IT materials in the class-room/out side the class-room. For example keeping the records, preparation of schedules and printed class-room materials can be produced efficiently. According (1,2,3) all these are complement to teacher only. We can say that the students will be easily motivated by modern student-centered teaching methods.

Here, our study was to know how JUTF students are utilizing available teaching materials like projectors, computer lab, Internet etc.,. Our study was analyzed with help of four cases. In the first case, it is noted and discussed that most of the students still have not benefited from the teaching of advanced facilities. 25% sample students have not seen teaching with slides/LCD/laptop/overhead projector. Because of this Teaching –Learning process may not be effective. We can say that there may be some impact over students' academic performance. In the second case, 50% students have utilized computer laboratory/software facilities for different purpose of learning. Engineering students often need mathematical computations in their core

studies. But our research shows these facilities are not being completely utilized. From case iii, we and I can say that Internet/on-line library facilities are not being established in the campus on the full faced manner. Our result show that clearly still most of the students have not used advanced facilities of learning.

In the case four, chi-square test tells us that students have no awareness regarding benefits of IT education or impact of information technology over their studies According to (3), the students should be able not only to obtain the results with the serious of mouse clicks but should also be able to explain how results were obtained logically, The author dealt this seriously, but he failed in this phenomena.

From our research result, we can say that students has to use all advanced software with help of computer laboratory provided to them.

According to the (4,5,6) computational mathematics has been learned from long time in the various fields. The methods of

calculation is being changed from time to time. Now-a- days computer is being used for different purpose generally and particularly for computation in the different fields. Engineering education is widely affected with computations performed by computer. For example present available computational software in the computing environment are Mathcad, Mathematics, Matlab and Mapple which have capability to do any type of calculations.. Here, our emphasis is to implement and make to be available these tools for mathematical computations. Students have to be provided with necessary guidance to implement methods with these packages and relates them to the theory in the

text

Conclusions and Recommendations

It is learnt that learning by pictures/materials is a permanent by using available information technology materials.

learning and it can be retained for long time. I do believe as students can be easily motivated technological teaching aids. I am concluding that teaching-learning process will be made effective, in any field, with help of innovative methods like student-oriented methods or teaching through illustrated teaching aids.

Students are to be encouraged by Teachers for improving their studies through the available information technology materials.

With my experience, I am concluding as teacher has to be acted with more responsibility and pivotal role in the teaching learning process. Other research findings show us that teacher himself to be behaved in a responsible manner of all other academic activities. It also tells as all types of materials and teaching aids are secondary to teacher.

All teachers have to be requested for teaching to be made effective

It is noticed that the role of educational administration and management in the educational instructions. By practice, it

has been involved with so many types of complex financial viabilities. However, efforts should be made to fulfill the requirements of competitive learning with world standards. I am feeling that every educational institution has its own problems like geographical, regional, economical and others problems. I am of opinion that students' studies are linked with facilities available I in the campus.

On-line Library
facility/Internet/computer
laboratory Facilities should be
made available to all students
easily.

Acknowledgements:

I am thankful to Senior staff member of our department ATO KASSAHUN MELESSE for his constant encouragement in the preparation of this research paper. I am thankful to Ato Mezgaba Nimeta, Instructor in Statistics, of our department for his support in statistical calculations.

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