

Information and Communication Technology (ICT) Models for Business Intelligence in Educational Institutions: A SURVEY

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ABSTRACT: Information and Communication Technology plays an important role in each and every field. The role of ICT in environmental monitoring and data gathering is paramount and serves as the Corner stone for technological advancements. ICT plays an important role in Education, especially in Adult learning, in Classrooms etc. Students get more benefit from ICT's in their studies. Most of the ICT's Software was used in the Educational system that manages all the activities performed in this system.. Certain ICT models are used in education sector. EIMS (Educational Institute Management System) is one of the multiple ERP solutions for university, colleges and schools. This paper includes a survey that examines the implementation of the models in selected schools, colleges and universities. In the interest of knowing the existing models we have organized a survey which covered vast area of institutional grounds. This survey covered the facts such as listening Presentation or explanation in the Institute, ICT (Information and Communication Technology) Usage at the Institute, Device used to access Internet, Publish E-content using ICT, Difficulties faced during the use of ICT.

Keywords: ICT, Education System, ERP, Enterprise resource planning

I. INTRODUCTION

Information technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise [1]. Many industries are associated with information technology, such as computer hardware, software, electronics, semi conductors, internet, telecom equipment and computer services.

Information and Communication Technology (ICT) has opened new avenues, like, Online learning, e-learning, Virtual University, e-coaching, e-education, e-journal, etc. Third Generation Mobiles are also part of ICT. Mobile is being used in imparting information fast and cost effective. It provides e-mail facility also. One can access it anywhere. It will be cost effective.

We see in education sector, how ICT is used in making business operation progressive and beneficial. Many Businesses used different ICT (Information and Communication Technology) models to increase their business operations. Through ICT models they easily access their information at their right place and time for

decision making, so that business earn more profit in less time.

Information and Communication Technology (ICT) provides variety in the presentation of content which helps learners in concentration, better understanding. Most of the areas were covered by ICT (i.e. Information and Communication Technology) in the world. ICT provides flexibility and learning methods in any business in a very short time to that of traditional process which was used earlier in business.

This makes business intelligent. We see today classes were changed, students learn new mode of classes through new technology and new technical devices (like laser Pen, Projector, Scanner, Printer etc).

The students understand better, if they do some practical related to the concept. It makes learning easy and interesting. Like Certain colleges used ICT models to develop their business and make business intelligence. These models are ERP. Companies used different ERP (Enterprise Resource Planning) models to manage their work processes.

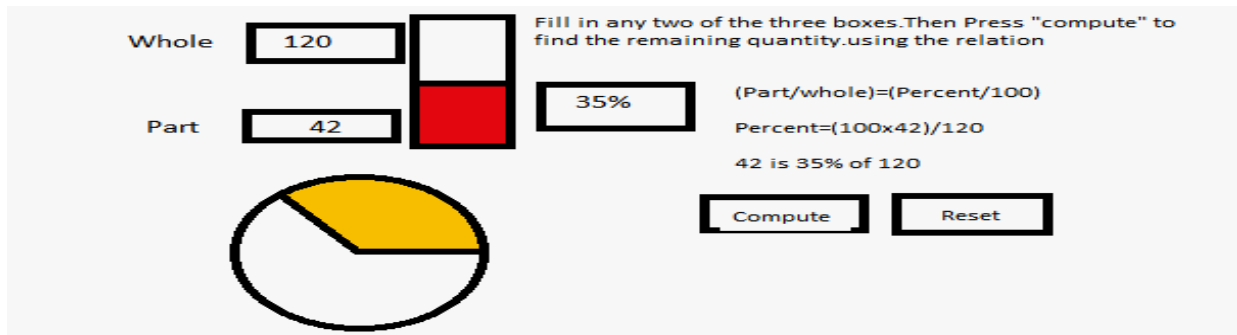
In recent years, we see rapid evolution of ICT's which provides a great opportunity to apply such technology for achieving great impact on people's well being [18]. Effective use of ICT can be seen under different areas across the world such as:-

- 1. Education Sector**
- 2. Health Sector**
- 3. Agriculture Sector**
- 4. Weather Forecasting**
- 5. Telecommunication Sector**

II. STUDY ABOUT THE ICT USED IN EDUCATION SYSTEM

In Education system, demand of ICT's increasing day- by-day. The role of ICT's in Education, their characteristics, strengths, weaknesses and success factors are discussed in this section. ICT has changed the scenario of Education system. Revolutions in Information and communication technologies have reduced National boundaries to meaningless lines drawn on maps.

In new educational system, we see the system has changed due to ICT's. Students have facility to get their lectures & Notes online. Teaching pattern is changed & done through audio and visual techniques. Library Management, fees deposition, admission of students & all other activities are also done through certain ICT models or ERP software's. Technology is helping teachers to expand beyond linear, text based techniques & to engage students who learn best in other ways.[18]. For example, teaching & learning mathematics using manipulative & computers is emerging. This creates a new class of manipulative called virtual manipulative.



In the given figure, students were learning about the relationship between Fractions, Decimal and Percents. Like this there are seven other ways of technology that may improve education:

1. Better Simulation and Models
2. Global Learning
3. Virtual Manipulative
4. Probes and Sensors
5. More Efficient Assessment
6. Storytelling and Multimedia
7. E-books
8. Epistemic Games

III. STUDY OF EXISTING ICT MODELS IN EDUCATION SYSTEM

The models have number of mechanisms and persistence and a tremendous impact towards the organization. New implementation of models needs to be the acceptance and commitment of the entire organization. ERP system technology is a huge revolution for the organization. Enterprise Resource

Planning (ERP) is a business software use to store and manage data from every stage of business. Several processes are performed by business resources like cash raw materials, production capacity and the status of business commitments such as Orders, purchase orders and payroll.

It includes many ERP Systems:-

Product planning, cost and development
Manufacturing
Marketing and sales
Inventory management
Shipping and payment

There are certain ICT models in education system (like schools, colleges and Universities). Most of the schools are used this web based technology such as "SchoolSaaS.com" is a browser based School Management Solution on Cloud. Another ERP System is "IFW" which focus on the rapidly growing and improving educational system. In this ERP System, we see different modules related to their work process in educational organizations.

Modules

1. Academic Modules



Student
Module



Exam
Module



Timetable
Module



Employee
Attendance
Module



Student
Attendance
Module



Library
Module

2. Administrative Modules

3. Finance Modules

4. Campus Portal

These modules help users to manage their work in a proper manner. One can also access it from any place.

IV. The SURVEY

A Survey was done in many educational Institutions and then we see many Institutions used different types of ERP models or we can say ICT models. Such kind of models is depending on their own phenomenon. In survey we focused on many problems faced by users while using ICT devices, e-contents etc. The survey comprised five questionnaires derived from an analytical framework and based on the results of a literature review. Questionnaires focus on listening Presentation or explanation in the Institute, ICT (Information and Communication Technology) Usage at the Institute, Device used to access Internet, Publish E-content using ICT, Difficulties faced during the use of ICT. Then we analyze the result through certain Graphs. We analyze that ICT users and Non ICT users are facing certain

difficulties related to their work while in contact with ICT.

The survey comprised five questionnaires derived from an analytical framework and based on the results of a literature review. All five questions are very different from each other to analyze the difficulties faced by ICT and Non ICT users at Schools, Colleges and Universities level.

V. SURVEY FINDINGS

As per survey we analyze the findings in graphs. In Survey we prepared an analytical framework questionnaire form which contains five questions and each and every question is different from each other. Let first question is about the listening of presentation and explanation in the Institute. People give their answers in four ways i.e.

Several Times, At least once in a week, Everyday and Never.

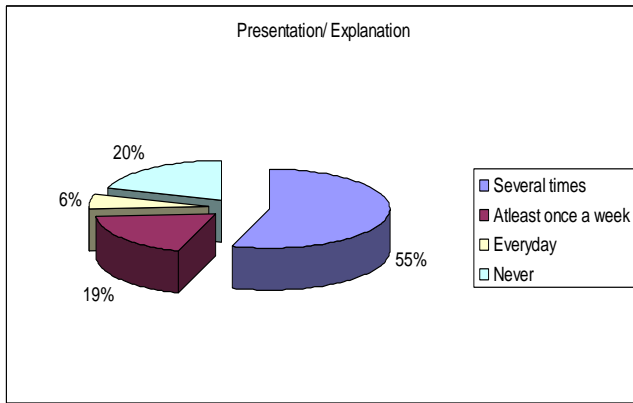


Figure 1. : Presentation or explanation in the Institute

In the above figure, 55% people listen presentation /explanation several times, 19% at least once in a week, 20% never and only 6% everyday.

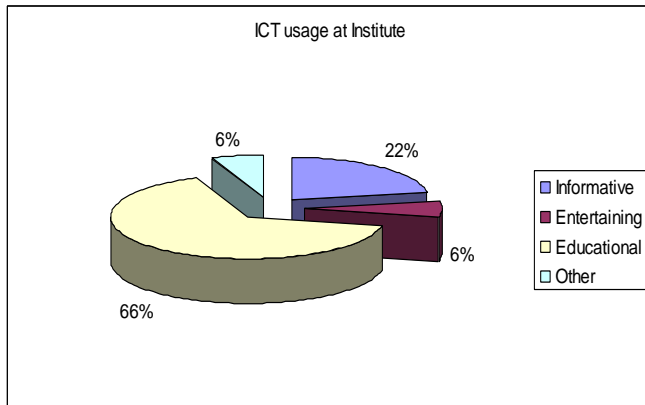


Figure 2: ICT usage at the Institute

This figure is about the usage of ICT at Institute and 22% people says for informative purpose means use of ICT is for providing useful and interesting information, 6% says for Entertaining purpose, 66% people think for educational purpose and 6% says for other uses.

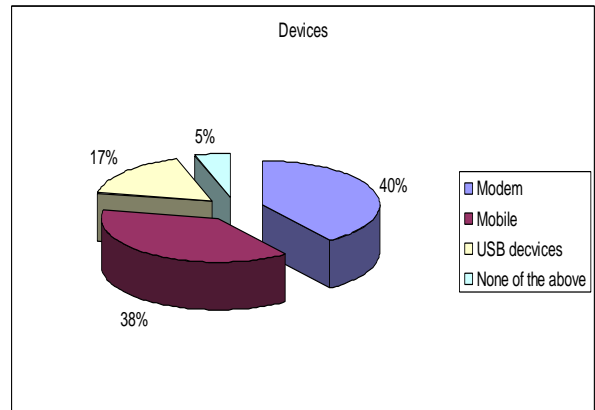


Figure 3: Devices used to access the Internet

In figure-3, 40% people access Internet through Modem, 38% access through Mobile, 17% uses USB devices and only 5% use none of the above. Mostly people use modem only for fast access of Internet and provide Broadband facility.

Remaining people use mobile and USB devices because many mobile applications provide this facility for easy access of Internet at any place or time. Suppose we travel from one place to another they use USB devices to access. But every device has own capacity.

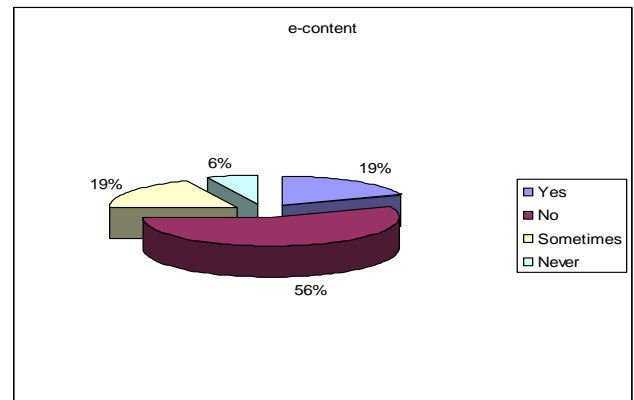


Figure 4: E-Contents using ICT

potential benefit. In some instances, technology is the only feasible and cost-

In the above figure, we ask about publishing of e-content using ICT in the Institute and users give their answers in various forms. 56% people say No, 19% say yes, same 19% also says sometimes and 6% says Never.

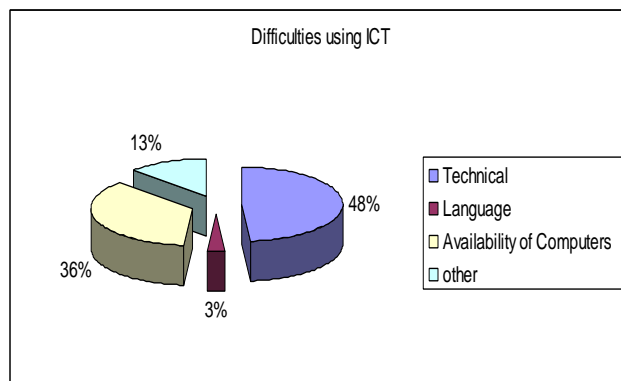


Figure 5: Difficulties faced during the use of ICT

Now in last question we ask about the difficulties faced by users. 48% people face technical problems, 36% people have difficulties in availability of computers, only 3% difficulties come due to language and 13% have other problem.

VI. CONCLUSION

The survey indicates that ICT is used for varied purposes in educational institutions. It was found that although there have been technical and linguistic difficulties related to use of ICT, institutes have been widely using ICT for education and informative purpose. It was also found that modem and mobile are the mostly used devices for use of ICT. The introduction of technology into processes of education change carries risk and great

effective means of improving education across all of a nation's schools. Broadcast and networked communications and easily reproduced digital materials can help provide high-quality resources or direct instruction to students, information that school leaders and decision-makers can use, and opportunities for teachers to enhance their skills

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