



10. Role and Impact of ICT in Research and Publication

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Abstract

Information and Communication Technology (ICT) provides access to information through telecommunication and includes internet, wireless network, cell phones and other communication medium. ICT tools are mainly used for its ability to ease knowledge gathering process and to enhance resources development. ICT provides great autonomy to the researchers in identifying and solving research problems in most creative way. This article is written with an objective of finding how is the academic researcher changed, helped or hindered by the use of ICT. This is an descriptive kind of research which draws and explores the concept, idea, components and applications of ICT in research. The finding suggest that the practice of ICT is strongly associated with research and publication.

Keywords: ICT, applications of ICT, Research and Publications

Introduction

According to Redman and Mory [1] "Research is systematized effort to gain new knowledge". Research starts with an idea that researcher has and always need for development of logical habits of thinking and organization. In context of D. Slesinger and M. Stepheson [2] "Research is manipulation of things, concept or symbols for the purpose of generalizing to extend, correct or verify the knowledge."

ICT is the infrastructure and components that provides access to information through telecommunication and includes internet, wireless network, cell phones and other communication medium all contributes a lot of accelerating research and enhancing quality of research. As usually research process deals with large amount of complex information and requires lot of skills to analyses and organize these well and ICT tools plays very important role in research and publication.



Concept of ICT

ICT first appeared in mid 1980s and was defined as "All kinds of electronic systems used for broadcasting telecommunication and mediated communication" with examples including personal computers, cell phones, internet etc. According to Nick Bostrom "ICT is fusion of infrastructure and components that enables modern computing."

Components of ICT

Components of ICT are

- **Hardware:** The physical technology works with information - computers, cell Phones etc.
- **Software:** Hardware needs to know what to communicate- OS and application software.
- **Telecommunication:** connect the hardware together to form network - LAN , WAN
- **Databases and Data warehouse:** Materials that other components work with resides and data warehouse contains all of the data.
- **Human Resources and Procedures:** the most important element is human element

ICT in Research

ICT is the powerful tool for research and publication in higher education. Four areas are particularly important: the study increase in band width and computing power available have made it possible to conduct complex calculations on large data sets and another important dimensions of ICT in research is use of online full text database and online research libraries / virtual libraries which are the direct outcome of the growth in telecommunication network and technology.

Applications of ICT in Research

1. Literature search

Before the use of ICT researcher needs to perform a manual search on hard copies of literature in libraries which was tedious and time consuming process with limited result. Now a days with the help of ICT tools researchers can search a lot of materials ,litratues using internet search engines and databases



Nick Bostrom quotes "Internet is a big boon to academic research. Gone are the days spent in dusty library stacks digging for journal article. Many articles are available free to public in open access journals or as preprints on the author's website"

A feature of web that enhances learning and research is the use of search engines. A search on web is very effective. Search engines are Google Scholar, Microsoft academic, Base, Shodh ganga

2. Content Search

Recently most of the researchers searches the content of research for specific keywords or phrases in which this is more effective and productive. The content search helps a qualitative research to count the frequency of contains certain keywords appears in an interviewed transcript more effectively.

3. Literature Tracking

Researchers need to create their own tracking mechanism. Previously researches have to sort, classify and store all their literature into physical folders. With the advancement of ICT, more and more researchers are using software that can manage, share and discover the literature contents and contact that they had reviewed.

4. Data Collection

With the help of application of ICT, data collection can be collected via online, web based or internet survey. This reduces the cost and time to collect the surveyed samples.

5. Data Analysis

ICTs are used to analyses the collected data quantitatively and qualitatively.

6. References and Bibliography Compilation

ICT improves researcher efficiency and accuracy while preparing their articles or theses.

7. Plagiarism Detection

With the help of ICT readers or researcher can use plagiarism checker software.

Conclusion

ICT has great contribution making avail the e-journals access, e-libraries all other information such as literature survey, data collection and analysis. In every aspect ICT proves itself as time saver, accuracy maintainer and speeding up the research work.