Chapter-3
Review of Related Literature
Literature Review

Review of related literature is very essential for a new research topic. The study of related literature implies locating, reading and evaluating reports of researchers as well as reports of the casual observation and opinion that are related to the individual planned research project. In any worthwhile study in a field of research, the researchers must have an adequate knowledge about the work that has already been done in the area of research. In brief this chapter represents an overall review of studies conducted abroad as well as in India in a chronological order to the topic of study.

Barlow and Gragham (1999)\(^1\) conducted a study to investigate the use of ICT in a sample of 120 industrial and commercial libraries; the data was collected through the questionnaires. The findings of the study were that 96% of the organization which responded, use computers for some aspect of their library and information services, 91% of the sample used various internet facilities including e-mail, World Wide Web, files transfer protocol (FTP) & TELNET. ICT was used for a range of office and other applications including, in rank order, e-mail, word processing, spreadsheets presentation packages and databases management system.

Simpson, Payne, Munro and Hughes (1999)\(^2\) Reports a study of current skills and attitudes of some Scottish training institutions and students' related experiences as the staff of teacher education institutions in Scotland are under increasing pressure to ensure that teachers in training
acquire a range of Information and Communications Technology skills. Ways of ensuring effective development of skills are discussed.

Chelin (2000) describes the Information Access for Deaf People project, undertaken by the University of the West of England as a follow-up to the FACE project. Explains the objectives of the project: to increase access to information for deaf people through appropriate Information and Communications Technologies (ICT), to contribute to the creation of a culture of using videophones, and to foster a greater awareness of information provision and educational resources available through libraries.

Breen, Lindsay, Jenkins & Smith (2001) report three related studies which investigate how undergraduates use and think about information and communication technologies (ICT) in the context of learning at university. Data were obtained via questionnaires, computer diary records and focus group discussions. The studies were intended to help universities decide how to incorporate ICT into student learning, how the cost of equipment should be shared between students and institutions, and how university provision should be organized to best fit student needs, attitudes and perceptions. Presentation of the results from the studies is followed by a discussion, which attempts to draw out the practical implications of the evaluation evidence for university policy-makers.
Vikashnath (2002) suggested an overview of the benefits of ICT and various advantages offered by the technology and the products and processes, which emerge from their use. The paper explores the avenues created by ICT enabled Networking processes for women in the area of governance and the hindrances faced in engendering to these processes and goes on to suggest ways to ensure that greater benefits are available to women in a distributed manner.

Tedd (2003) *An overview of cooperative and ICT-based projects in British libraries is provided. Many of the early projects of the 1970s and 1980s have ceased but some have developed into current working services. During the 1990s the UK government funded various initiatives to improve the learning opportunities for its citizens whether through formal education courses at colleges or universities or by ‘lifelong learning’. Descriptions are given of the Electronic Libraries Programme in Higher Education Institutions and the People's Network in public libraries and current developments in these sectors as well as in the national libraries of Britain, Scotland and Wales are provided.

Lutza (2003) Using data from developing countries, this paper examines the links between ICT diffusion and per capita income, trade and financial indicators, education, and freedom indicators. Internet hosts, Internet users, personal computers and mobile phones represent indicators of ICT. The Gompertz model of technology diffusion is used to study
ICT dissemination. The results show that income and government trade policies influence ICT diffusion. However, freedom indices may or may not affect ICT diffusion. Moreover, only personal computers and Internet hosts seem to have a positive association with income. Contrary to expectations, ICT diffusion is not associated with education.

**Majnja and Mabel (2003)** the study discusses that information and communication technologies (ICTs) have become basic ingredients and competitive tools in the information-incentive tertiary higher education sector. In library and information science (LIS) education, ICT can represent both the contents of course and essential tools for effective learning of the content.

**Deusen, Jones, Mueller, Ricks & Schlegelmilch (2004)** The use of information and communication technology (ICT) is revolutionizing traditional educational methods in university contexts and changing the process of how educators do their jobs. However, research offers conflicting views regarding the benefits of ICT in the classroom. To better understand the various advantages and disadvantages of using ICT, two major cross-sectional studies of the perceptions and practices of international samples of business faculty and students were conducted. The first study, published in this journal, identified perceived obstacles that prevent faculty from successfully using ICT. The second study was of student perceptions. This paper reports the results of that second study.
and identifies significant differences and similarities between faculty and student ideas of effective ICT use.

Gulati (2004) discusses the status of information and communication technologies usage in Indian libraries with special reference to special libraries and the efforts made by various institutions to propagate e-information products and services. This paper highlights the digitization efforts in India at NISCAIR, New Delhi, IIITM, Kerela, C-DAC Pune, and digital library of India. It concludes with the challenges for library and information science professionals and overview of initiatives taken by Government of India.

Sarshar and Isikdag (2004) This paper assesses the awareness and use of information and communication technologies (ICT) systems within the Turkish construction industry. The findings will assist in identifying the future directions and priorities for how to use ICT as an enabler in this country. The research has been carried out via 22 semi-structured interviews with senior construction professionals within government and private organizations. It investigated the usage and applicability of current information systems and technologies. The interviews then explored the appropriateness of some of the newly emerging technologies to the industry in Turkey. The findings are reported under three categories of: ICT infrastructures and strategies, the use of information systems, and views on emerging technologies.
Onyejeku (2004)\textsuperscript{12} describes how ICTs facilitate empowerment mainly through the opportunities with emphasis on economic empowerment, this paper raises awareness about gender related barriers to women's full realization of the benefits associated with the empowering nature of ICT. These barriers include poverty, a lack of education and information, the problem of digital divide etc. Innovative ways of dealing with these barriers have been explored in this paper.

Iftikhar Ali and Proctor (2005)\textsuperscript{13}In an age of IT some developing countries are made vulnerable than others to international competition through failure to utilize fully the benefits of an ICT culture. The authors suggest that the strategies in response must include a radical review of attitudes and methods of delivery of ICT in schools and give as an example the recent experience of The City School, the nationwide school’s organization in Pakistan with whom they are employed. The authors suggest that The City school experience provides a model that may be emulated by schools elsewhere in both developing and industrially developed countries.

Lumsdaine and Hunt (2005)\textsuperscript{14}To consider the nature of the conflict that arises among individuals and teams involved in information and communications technology (ICT) projects and with the emphasis on the situation in Australia and the role of conflict management and dispute resolution processes. The study offers a straightforward discussion of the
sources and types of conflict likely to occur in the ICT industry and the practical approaches that those involved adopt to take such things in their stride.

**Singh (2006)** Studies the application of ICT in the libraries and information centers of the DRDO and the CSIR located at Delhi, these libraries include the Defense Science library of DESIDOC. The objectives of the study are to know the availability of ICT infrastructures, various areas of application of ICT; to know about the hardware and software available and used in the libraries and information centers of the DRDO and CSIR.

**Peter, Jamali and Nicholas (2006)** Study provides a review of the past studies on use of ICT for people with Special Education Needs (SEN) to inform a major research project using ICT to facilitate self-advocacy and learning for SEN learners. Although the literature show a great number of ICT initiatives for people with all kinds of disabilities, there has been a surprising lack of research into the usability of the various applications developed, and even less concerning those with learning difficulties. Findings highlight the need for more research on usability aspects of current and potential applications of ICT for people with SEN.

**Omona and Koja (2006)** Report on a study which assessed the application of ICT in health information access and dissemination in Uganda. The project focused not only on information obtainable through
library for research, teaching and practice, but also on ICT application concerned with the administration and planning of health services in Uganda. The paper explores area where ICT is used most, cost of accessing information user profile, ICT literacy, quality of services and telemedicine in the country. It concludes that a number of challenges must be addressed if the full benefit of the use and application of ICT in health information access and dissemination is to be realized in Uganda and draws the attention of all the stakeholders in the health sector to the need to support and promote ICT as the most effective tool for health information access and dissemination.

Krystyna(2007)\(^\text{18}\) suggests that global ICT ethics should be an ethics focusing on the dynamics of the relationship between the weak and the strong, the rich and the poor, the healthy and the sick worldwide – and it should explore the ethical problems from the point of view of both parties involved. That way, Global ICT Ethics can have a truly communicative character, and it can become an ethics that will be both a co-creator and also a result of a democratic processes.

Drevin, Kruger and Steyn (2007)\(^\text{19}\) to introduce the approach of value-focused thinking as applied to information and communication technology (ICT) security awareness, particularly in academic settings. The study reports the results of a series of interviews with seven staff members, using the value focused approach developed by Keeney (1994).
The output from the interviews accompanying the study yielded a list of value statements, including: whether equipment should always be locked away; the importance of card access; the importance of ensuring that access gates and turnstiles are always in working order, securing laptops with cables; and installation of security cameras. The study provides a comprehensive listing of security awareness objectives that can serve as a basis for decision making and a guide to planning for ICT security measures.

**Gupta, Dasgupta and Gupta (2008)** e-government initiatives all over the world endeavor to integrate Information and Communication Technologies (ICT) to transform delivery of government services to their stakeholders by improving quality of services, accountability and efficiency. In this study we explore adoption of ICT to enhance government-to-employee interactions in a government organization in a developing country. We examine this adoption behavior by utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) that provides an integrative view of user acceptance. We found that performance and effort expectancy, social influence and facilitating conditions all positively impact the use of the ICT.

**Toms and O'Brien (2008)** The purpose of the paper is to understand the needs of humanists with respect to ICT in order to prescribe the design of
an e-humanist's work bench. A web based survey, gathered the following data from 169 humanists: profile of the humanist, use of ICT in teaching, e-texts, text analysis tools, access to and use of primary and secondary sources, and use of collaboration and communication tools. The paper examines the needs of humanist, founded on an integration of information science research and humanities computing for a more comprehensive understanding of the humanist at work.

Elnaggar (2008) Despite the great strides in information and communication technology (ICT) and the global and far-reaching effects of its spread, women in the Arab Gulf region, in general, and in Oman, in particular, are at a higher risk of being marginalized from today's knowledge-based economy, due to factual findings related to a traditionally male-dominated ICT sector, unequal access to training, the lack of Arabized Internet content and training, and the lack of awareness and policy advocacy, among others. This research aims to provide a gender-sensitive assessment of the ICT space in Oman and the status of women within it, and to develop the seeds of an information base that provides gender analysis of the opportunities and challenges in the ICT space. Survey results show that socio-cultural norms, the innate character issues of Omani females, access and training, and career counseling are mostly the factors that inhibit them from entering and
adopting a career in ICT.

Nair (2008) This paper discusses how the ancient science of life and health becomes a global Medicare system with the application of ICT. The study covers the basic Philosophy of Health, Disease and Treatment in Ayurveda. The basic philosophy of Ayurvedic system of medicine as a science involves the characteristics for diagnosis and treatment for all kinds of people and its social relevance in application has been internationally accepted. This article briefly describes the universality of Ayurvedic system of medicine and a model suggested with the application of ICT in Ayurvedic healthcare.

Uesugi (2008) This paper seeks to present a case study of a rural Do It Yourself (DIY) Information and Communication Technology (ICT) project in a Japanese depopulated rural community. In order to achieve sustainable development of a rural ICT project, which is the key to enabling economic development, it is essential to involve residents' participation. A test-bed DIY project was constructed in a Japanese rural community in 2004, and surveys were conducted in 2004 and 2006 in order to identify residents' needs and awareness of ICT, determine the information literacy level, and evaluate the attitude toward the acceptance of ICT.

Tan, Chong, Lin and Eze (2009) the purpose of this paper is to
investigate the innovative characteristics, benefits and barriers influencing internet-based ICT adoption among the small and medium enterprises (SMEs). A questionnaire based survey was used to collect data from 406 managers or owners of SMEs in the southern region of Malaysia. The results suggest that internet-based ICT adoption provides a low cost yet effective communication tool for customers. However, security continues to be a major barrier. Finding on cost as a barrier is mixed. The inferential statistics reveal that relative advantage, compatibility, complexity, observability and security are significant factors influencing internet-based ICT adoption.

**Lone (2009)**\(^{26}\) provides a background for the special issue on Problem Based Learning and ICT and focuses on three core themes: Problem Based Learning (PBL) and its background and pedagogical principles; learning characteristics of information and communication technology (ICT); and intercultural perspectives. The editorial presents a Danish perspective on PBL based on the long tradition for PBL within university teaching and learning and international collaboration. The editorial is concluded through a short presentation of the articles in this special issue.

**Burke (2009)**\(^{27}\) says that the paper concludes that the library community has a lot to offer to, and benefit from, the semantic web, but there is limited interest in the library community. It recommends that there be
greater collaboration between semantic web researchers and project developers, library management systems providers and the library community. Librarians should get involved in the development of semantic web standards, for example, metadata and taxonomies.

Brown and Grant (2010). Central to this paper is the argument that existing classifications of the information and communication technology and development literature fail to explicitly acknowledge a fundamental duality between two distinct problem domains found within the research body. Through an extensive review of 184 journal articles and conference proceedings, a framework is proposed that suggests a partitioning of the existing literature into two distinct streams of research: (1) those studies that focus on understanding technology “for development” and (2) those studies that focus on understanding technology “in developing” countries. More than an exercise in semantics, the authors argue that the two streams represent separate sets of research objectives that are currently being conflated and addressed interchangeably within the same research environment. At present, there appears to be little recognition or explicit acknowledgement of this branching of research domains, as well as little reflexive discussion on the epistemological, methodological and theoretical implications of this delineation. A discussion related to the efficacy and relevance of the two separate research agendas is provided,
along with recommendations for future research directions.

**Adeleke and Olorunsola (2010)** The paper report the survey on the use of online tools and techniques for cataloguing and classification in Nigerian libraries. It provides information on libraries' awareness on the use of online methods for processing library resources, their efficiency and attitude of librarians to such tools. It shows that libraries in developing countries like Nigeria should intensify efforts to close the gap between them and those in the developed countries in terms of ICT literacy.

**Sampath and Biradar (2010)** The purpose of this paper is to examine the use of information communication technology (ICT) in 31 college libraries in Karnataka, India by investigating the ICT infrastructure, current status of library automation, barriers to implementation of library automation and also librarians' attitudes towards the use of ICT. The study reveals that application of ICT in Indian college libraries has not reached a very high level. Lack of budget, lack of manpower, lack of skilled staff and lack of training are the main constraints for not automating library activities. Even though library professionals have shown a positive attitude towards the use of ICT applications and library automation, they need extensive and appropriate training to make use of ICT tools. This is a comprehensive study on the use of ICT in Indian
college libraries. Its findings should help college librarians, local
government and also the University Grants Commission, New Delhi.

Christopher (2010) has described information and communication
technologies and development (ICTD) is a field that has grown largely
outside the purview of public libraries. In bringing information access
and services to communities with fewer economic and social resources,
the organizations and innovations emanating from the ICTD community
have much to offer libraries. While libraries, too, offer a largely untapped
vehicle for those in the ICTD community, the aim of this article is to
introduce the defining features, tenets, and focus areas of ICTD, and to
provide examples of how partnering with ICTD could benefit libraries.
ICTD actors include government, development agencies, foundations, the
private sector, nongovernmental organizations, and academic institutions.

Wielicki and Arendt (2010) This paper reports on findings of a
comparative study conducted among small and medium-sized enterprises
(SMEs) in the USA, Spain, Portugal and Poland regarding different
aspects of the business digital divide. Specifically, this study explores a
shift in the perception and ranking of barriers to implementation of
information and communication technology (ICT)-based solutions among
SMEs, which can be attributed to the degree of ICT readiness exhibited
by a given country. We have verified a hypothesis that the more
knowledge-based a given economy is (as measured by ICT indexes), the more likely it is that perception of the key ICT implementation barriers among SMEs will shift away from mere lack of funds and technology toward lack of knowledge, education and information system planning. The conclusion of this study may well serve a better distribution of resources allocated by the governments to overcome the business digital divide that limits productivity of so many SMEs.

Verhoeven, Heerwegh and Wit (2010) find out whether freshmen, after 6 months at the university, changed their self-perception of ICT competences and computer use in comparison with their behavior at secondary school, and what factors can explain the self-perception of ICT competences and computer use in secondary school, in the university and their possible change. The research is conducted among 714 freshmen of a large university. Students who consider the computer to be a useful instrument, have control over the computer, possess a certain level of Internet competence, and are at ease with computers are more likely to have the skills needed to maintain a computer, to develop a web site, and to use basic ICT skills. The predictors have little influence on Internet usage.

Shri Ram, John, and Kataria (2011) This paper seeks to provide an insight into the implementation of some of the innovative Web 2.0
applications at Jaypee University of Information Technology. The emergence of digital technologies and information and communications technology (ICT) tools in libraries has encouraged the implementation of a wide range of applications, such as digital libraries, video on demand, reference services and database services into library services. The paper suggest that Web 2.0 supports a constructivist approach to information awareness tools, and has great potential to socialize learning and information delivery to a greater extent. Web 2.0 technologies should be implemented as a medium of information communication, taking into account the pedagogical perspectives.

Sinha (2012)\(^{35}\). The paper presents views on the extent of ICT/Internet awareness and status on use of e-resources by the Assam University Library users. The period of survey was July to August 2008 covering the users comprising of faculty, research scholars, UG/PG students and other staff using internet accessing to the e-resources under the UGC-INFONET Digital Library Consortium. The data is analyzed using software. The paper highlights the findings in respect of Internet Awareness, its use pattern and attitude of library users towards the electronic resources, in this context.

Adetimirin (2012)\(^{36}\). This study was conducted among undergraduates 7 Nigerian Universities. Four faculties were purposively selected with a
study population of 8,497. Random sampling procedure was employed using a sampling percentage of 20% to give a sample size of 1,702. Results revealed that computer, telephone and the Internet were the three ICT mostly used by the undergraduates, although more on an occasional basis. Three major factors affecting the ICT literacy of the undergraduates were identified as irregular power supply, inadequate ICT and limited duration of the use of the ICT.

Wit, Heerwegh and Verhoeven (2012) hypothesized that freshmen at university would not only have mastered more ICT skills, but would also use computers more often than their counterparts of 5 years previously. The main variables of the Technology Acceptance Model (as well as facilitating factors, study motivation and some contextual variables) were used as predictors to explore the possible changes between 2005 and 2009 in the mastering of 19 ICT skills, and the frequency of the use of computers for six different tasks. The results of the study show that freshmen became more proficient in some ICT skills, while proficiency in other skills did not change or even dropped. Gender is still an important factor to predict ICT skills and the frequency of using computers, but it is shown that for some skills female students have caught up with their male counterparts.
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