CHAPTER I

INTRODUCTION

‘It is good to be literate, but better to be digitally information literate in the

Postliterate Society’

1.1. OVERVIEW

The later decades of twentieth century marked the advent of digitalization of the entire scheme of the world. This digital revolution led to the proliferation of computers and new technologies. Inventions of new communication technology in the middle of the 20th century ushered in the Information Age. Cellular Phone, Digital Computers, Internet and some other digital innovations are sweeping the world. This has changed the way people communicate with each other. The current setting also shows signs of digital medium slowly interlinking other traditional media like print and television into it. The world has shrunk into a global village where everything is within the reach. The communication process has become easier than one can imagine and yet so many wonders to be unraveled. The gadgets utilized for broadband and WIFI technology are the crest of the digital world so far, though more exciting novelties are in the line to be followed. As pointed out by Manuel Castells, we are in a network society everything revolve around networks. According to Manuel, network society is a society where the key social structures and exercises are composed around electronically organized information networks. Manuel also pointed the huge shift from industrial society to informational society on a worldwide scale.
1.2 INTERNET PENETRATION- GLOBAL SCENARIO

In the course of recent years the ICT revolution has driven worldwide advancement in an exceptional way. Technological progress, infrastructure, and falling costs have acquired sudden development in ICT access and net connectivity to billions of individuals around the globe (BrahimaSanou, Director, ITU). International Internet Statistics Report 2015 has observed that around 40% of the world population has access to internet presently whereas it was less than 1% in 1995. In just two decades internet has made itself an inevitable part of the whole world with its conspicuous presence in almost everything. In the period of 2000 to 2015, worldwide web entrance has grown 7 fold from 6.5% to 43%. According to ITU (International Telecommunication Union) report ‘ICT Facts and Figures 2015’, it was estimated globally 3.2 billion people, of which 2 billion from developing countries, get access to Internet during the year of 2015. However, the report says that four billion people from developing countries remain disconnected, speaking to 2/3 of the populace dwelling in developing countries. When closely observed; the gap between developed and developing nations in internet usage is wide.

1.2.1 Internet in India

Sam Pitroda, considered as the architect of India’s Telecom Revolution introduced the model of privately owned Public Call Offices (PCOs), fondly cherished then as telephone booths which operated long distance calls and had operators in it. The users were issued with electronically-generated receipt for the duration of long distance call and charges based on usage. During 1995, the launch of VSNL service, telecom revolution slowly started in India. Internet
connectivity was made available in India through VSNL service. 10,000 users accessed internet within six months of its commencement.

Today, Telecom Regulatory Authority of India (TRAI) report says there were 142 Internet Service Providers (ISPs) offering broadband services in India as on 30 June 2016. The top five ISPs in terms of total subscriber base as on 31 March 2016 were BhartiAirtel (1.40 million), Vodafone, Idea Cellular, Reliance and BSNL. A report titled ‘Internet in India 2016’ by the Internet and Mobile Association of India (IAMAI) jointly published by the IMRB, reveals that the number of internet users in India is expected upon to reach between 450-465 million by June 2017. The report also says that India has the second largest internet users base in the world. The report additionally finds that there is a tremendous spurt in the quantity of people getting to Internet once a day in Urban India. Internet connectivity to rural India remains still a wholly unattainable issue considering the vast geographical diversity and other factors. Reaching to the remote locations in the rural areas by laying fiber optics stipulates enormous amount of efforts and time. Other factors like lack of potentially viable market and improper aids all result in the negligence of digitalization encompassing rural areas. But innovative ideas brought out by Google’s Project Loon, Facebook’s Internet.org and Microsoft’s White Spaces envision on a mission to link these breaches on a global scale and connect the nook and corners of the world.

1.2.2. Digital Divide and Knowledge Divide

The term ‘digital divide’ was aptly coined by a former United States Assistant Secretary for Commerce for Telecommunications and Communication (Dragulanescu, 2002). The Digital Divide is a social issue alluding to the
contrasting measure of data between the individuals who access the Internet and the individuals who don't access. The knowledge divide is the crevice in ways of life between the individuals who can discover, make, oversee, handle, and disperse data or information, and the individuals who are weakened in this procedure. The spread of internet access centers in small towns and villages has narrowed down the digital divide into knowledge divide. With browsing center flying up in remote towns and villages and obstructions due to gender age, and so forth are diminishing in many nations, the digital divide appears to be moving from a gap in Internet access and connectivity to a path called 'knowledge divide'.

‘Knowledge Gap’ is the gap between the individuals who have the knowledge and comprehension to interact with the technology and the individuals who are inactive consumers of it.

Computer illiteracy seems to be a major factor of hindrance. Computing skills and technology are important technological skills that have not been acquired by majority of the habitants of rural India and it also prevents the people from using internet technology (Salinas, 2003). Numerous studies in this field expose the fact of the vast digital divide that plagues India as especially rural India still is not impacted by digital era. Some factors like low literacy rate, educational system and language amount to the barriers in many parts. Hence the digital divide still persists (Bansod & Patil 2011). The other major factor that contributes to digital divide is lack of ICT skills among people. Computer literacy in India is said to be the minimal and basic knowledge of computers and it includes elementary skills of programming. Anyone who is comfortable with basic computer programs and other ground level computer functions can be called a computer literate (National Indian Education Study home Survey, 2013). Several initiatives were taken to
cement the digital divide and focus on e-Literacy i.e. Electronic Literacy in India. Bharat Nirman, Hole in the wall experiment e-Kraunt, Gyandoot and Akshya project are some of the commendable e-literacy projects in India. Recently launched Digital India and Smart city are some of the steps taken on the behalf of the policy-makers to bridge the gap between haves and have-nots access to technology. But what kind of initiative has been taken to widen the knowledge-divide needs to be focused.

1.2.3 Digital India

“To transform India into a digitally empowered society and knowledge economy” India made a launch of Digital India, a flagship project under the Prime Ministership of Narendra Modi. The prime feature of this programme is to bring into the core utility the high-speed internet connectivity. The mobile phone is to be taken as the key backbone of the delivery mechanism and the project “Digital India” provides a one-stop shop solution for all the government policies, initiatives and services to be publicized, informed and executed. This project seeks for a transformation of India into a connected economy and setting up for the goal of attracting huge investments in electronics manufacturing and creating millions of jobs in that sector. Indian government has floated many new ICT projects to raise the standards of the technological society which will naturally boost up the number of internet users. The leaders and stakeholders here strongly believe that ICT act as a catalyst in driving the developmental process forward and boosting the efficiency of the increasingly integrated worldwide economy.
Making India as a Digital India means making the population digital literates and it is a humungous challenge to execute the task. The government of India has come out with a vision to make at least one family member digitally literate and long range plan is that about 1 crore people will be digitally literate in five years while for short-term aim is to have 10 lakh individuals under the umbrella of e-literacy (Digital India, 2015).

1.2.4 ICT Policy in Tamil Nadu

The State Government of Tamil Nadu has also taken some initiatives as a part of Digital Literacy programs. The Vision Document 2023 of Chief Minister expects that Tamil Nadu will be known as the development center point and knowledge capital of India, on the quality of world class establishments in different fields and the best human ability. The Information Technology Department was set up in 1998 with the accompanying targets: give Government administrations, both informational and transactional, to citizens, at their entryway through Internet, and to bridge the rural and urban divide. Upgrade the quality of life of natives through Information and Communication Technology (Tamil Nadu IT Policy, 2014). ICT Academy of Tamil Nadu (ICTACT), an Initiative of Government of India, Government of Tamil Nadu and Industry, is a not-for-profit self-governing association centering to enhance the quality of students going out of educational institutions in Tamil Nadu and to make students industry prepared and quickly employable in the ICT industry involving the ICT services and the ICT based fabricating sectors. A technologically competent society means a high growth rate in knowledge capital and Indian economy as it has been observed that ICT has
been a prominent growth booster for the Indian economy. In that context, Government of Tamil Nadu has taken initiatives to improve its ICT sector.

Training the students in accordance with the industrial requirements and generating more jobs in the state is the motive for the set-up of the ICT Academy. Since then ICTACT reaches out to all the higher educational institutions across the state, equipping both the faculty members and students with various skills needed for a more meaningful and productive teaching-learning process. As a part of this training, Faculty Development Program, Skill Development Initiatives, and Industry- Institute Interaction are organized, providing a quality-centric and technology driven training to see a constructive productivity. ICTACT, has collaborated with Microsoft for a mission of making non-IT students in the state as digital literates through this Digital Literacy Program, which will benefit the member institutions and non-member institutions, comprising of Engineering Colleges, Arts & Science Colleges, Management Institutes and Polytechnics.

**Free Laptop Distribution**

During the year 2012-13, 7,30,000 Laptop computers were procured and distributed. 5,65,000 laptops were ordered for the year 2013-14. 3,49,000 laptops have been distributed and 2,16,000 laptops are being distributed (Policy Note of IT Department, 2014). Times of India reported that the free laptop scheme as a project which will cover 912,000 students this year at a cost of Rs.912 crore, is designed to give a major boost to Computer literacy. (TOI, July 2014). Laptops are given to the students of Government and Government- aided schools, Government and Government- aided Arts and Science and Engineering Colleges and Polytechnics, to enable them to acquire better computer skills. Both rural and urban students are
given laptops. The Hindu newspaper reports that the free laptop could open up a radical new universe of learning based chances to a generation of students who want to do well in higher education and after that in the employment. Following priceless laptop distribution on September 23\textsuperscript{rd} 2016, Tamil Nadu government issued orders to set up ‘Amma Free Wi-Fi’ zones in 50 places across the state. The scheme at the first phase will provide free WIFI to government schools and colleges.

Majority of the e-Literacy programmes were implemented to enhance the youth digital skills. The digital environment will be soon ready for the urban and rural users. But there is a question does the users have basic literacy to utilize the environment constructively. Thorston Veblen’s technologist determinist view strongly argues that developments in communication technologies or media are the prime antecedent causes of changes in society. Hyper-globalists claims that technology is inevitable. Christopher Evans declared that the PC would change 'world society at all levels' (Evans 1979, cited in Robins & Webster 1989, p. 24).

Finnagen(1988) , who is a technology determinist critic argues that access to the technology will not lead to development. Finnagen puts that ‘who uses the technology, who controls it, how widely it is distributed' also counts. Political control, class interests, economic pressures, geographical access, educational background and general attitudes are the other concerns. Hence the free laptop distributions, free WiFi zones and Digital India projects will really help the students to develop them is an unanswered question.
1.2.5 Digital Youth

A Web 2.0 webpage may enable clients to interface and work together with each other in a web-based social networking discourse as designers of user generated content in a virtual group, as opposed to the original of Web 1.0-period sites where individuals were constrained to the passive viewing of content. Web 2.0 in which today’s youth spend most of their time has the credit of possessing an excellent information flow. Many ICT-related surveys claim that young people are the most internet-savvy and they are the chief users of it. According to IAMAI report, As on October 2015, 69% of Users are utilizing Internet every day. Further, the report finds that 32% of the clients are College Going Students taken after by 26% Young Men.

1.3 INFORMATION LITERACY TO DIGITAL INFORMATION LITERACY

Besides basic computer literacy, web 2.0 needs an information literacy to operate it. So, there is a need to understand what information literacy in Digital Context is. The term information literacy initially showed up in print in a 1974 report by Paul G. Zurkowski composed for the National Commission on Libraries and Information Science. Zurkowski vision for information literacy skill was not library focused, it advocates for an approach in its delivery across all trades, occupations, professions. Zurkowski used the phrase to describe the "techniques and skills" learned by the information literate "for utilizing the wide range of information tools as well as primary sources in molding information solutions to their problems" and drew a relatively firm line between the "literates" and "information illiterates". The United States National Forum on Information
Literacy defines ‘Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information’.

As information technology was slowly gripping India, discussions and debates, pivoting around the impact of IT, approached with all its seriousness on the issue of ‘information gaps’ between developed and developing countries. The immediate concern posited by the emerging trend was about the probability of world population divided into two groups: ‘information elite’ and ‘information ignorant’. It might soon turn out to be the dominant aspect of fostering inequality. Information literacy in digital context expands from book to screen. Information Literacy in a digital context has been redefined by scholars. Redefinition of information literacy expands the scope of generally understood information competencies and emphasize on delivering and sharing information in participatory digital environments (Thomas, 2011). The landing of the Internet in the 1990s settled that Information Literacy is more than a library utilize. (Lanham, 1997)

Digital Information Literacy (DIL) is the capacity to perceive the need to get to, and to assess digital data. A digital literate can certainly utilize, oversee, make, quote and offer wellsprings of computerized data in a successful way. Digital Information Literacy(DIL) involves “knowing how digital information is different from print information; having the skills to use specialized tools for finding digital information; and developing the dispositions needed in the digital information environment” (Illinois Mathematics and Science Academy, 2007).

Having a Digital Information Literate population is important socially, economically, educationally, and globally (Ministry of Economic Development, 2008). DIF involves “knowing how digital information is different from print
information; having the skills to use specialized tools for finding digital information; and developing the dispositions needed in the digital information environment" (Illinois Mathematics and Science Academy, 2007). Metaliteracy is imagined as an extensive model for information literacy to progress critical thinking and appearance in social media, open learning settings, and online groups (Trudi & Thomas, 2013). Being cognizant of the need for gaining information, and the necessary skills to accessing and most importantly, evaluating and discerning the available electronic information form the process of Digital Information Literacy. The digital literate can unquestionably utilize, oversee, make, quote, and offer sources of digital data in a successful way that shows a comprehension and affirmation of the social, cultural, ethical, economic, legal, and social aspects of information. (Jeffrey, 2011). Information literacy involves the acquisition of skills and knowledge in using ICT tools to search, evaluate and judge online information (Livingstone, 2004). Iqbal (2015) pointed out digital information literacy is a major component of information literacy. DIL skills helps the users cope with information from a variety of electronic formats and present techniques and methods of gathering digital resources. It creates awareness of issues like copyright and intellectual property rights in an electronic environment. One needs to be a digital information literate in the information age to be competing in this digital era.

**DIL for Learners**

Digital information has become the core of the all aspects of modern life and hence it bids for a strong necessity for people to be digital literates. College students should be equipped with digital information literacy and a degree of skill in using computers. Well-versed in the sort to access internet helps a student a lot
as enrolment, subscription to online course materials, preparing assignments, checking grades and communicating with teachers have all contracted to virtual world. Also while a graduate gets a job, digital information expertise will determine him or her to be a key player in the workforce where all have the merit of coming from knowledge-based society. According to the New Zealand Ministry of Economic Development, 2008 there is an urgent requirement for the digital learners and teachers in a digital future. This phenomenon is eloquently stated by Marshall (2006): “Critically, capability includes the ability of an institution to sustain e-learning delivery and the support of learning and teaching as demand grows and staff change” (p. 7). Information has become fluid, global and transcendental. Library is just a part in the information chain in the Internet era. There are numerous sites of information. A shift from print medium to web 2.0 shows the curve of progress in the development chart of innovations in information and technology. Hence, there is an urgent need for digital information literacy to empower the end-users.

Having digital information literate population is important socially, economically, educationally, and globally (Ministry of Economic Development, 2008). A person who cannot read the digital information and understand the accuracy, and follow the demands of specifications is at greatest inconvenience in getting a job in the present globalizing world. The role and importance of Lifelong Learning in India has been widely increased in recent times. In a technology-driven, knowledge-based competitive economy the landscape of learning is quick changing in India (Amartyasen, 2001). Sen’s opinion insists digital skills as the pre-requisite for young college students and it is a part of lifelong learning. Students who are entering colleges and universities were lacking fundamental
research and data ability aptitudes (including critical thinking and problem solving). Technology is changing teaching and learning while, we are seeing an explosion of information formats and choices. Assessment studies show that there is an over-dependence on the Web as a data source by students. Faculty wants to needs to see a change in the nature of student work, an increase in the efficacy of student research, and students taking greater liability for their own learning. Students need to finish assignments with not so much trouble but rather more fulfillment. Employers need to employ graduates, who are skillful, willing to take liability, and ready to create new thoughts and directions for the future. DIL will help in all the aspects. In that context, Digital Information Literacy skills are essential for learners. DIL Assessment of students will help them to reveal their DIL skill level.

1.4 STATEMENT OF THE PROBLEM

Rapid changes in technology are transforming the way people communicate, collaborate, and learn using online social networks. Undergraduate students are not graduating with the pre requisite skills for 21st century such as online communication, collaboration and digital literacy skills to be successful in the 21st century global society (Robert, 2009). In the present current society advancements in technology opens passages of exceptionally tremendous accessibility of data through advanced digital resources however the questions emerge are we really aware of all the digital assets available to gather, arrange and analyze the information (1qbal, 2015). The findings of the IAMAI report further reveal that in Urban India, Mobile Internet user base has developed at a rate of 65% over a year ago to achieve 197 million in October 2015. The Mobile Internet
Users have surged to 80 million by October 2015 developing at 99% in the course of the last year. The user base of Mobile Internet users in Rural India is relied upon to reach 87 million by December 2015 and 109 million by June 2016. The developing web penetration in India is creating new probabilities to share data and administrations among a bigger number of individuals, all the more quickly and at lower expenses. Global economy demands a workforce with a wide variety of technical skills, interpersonal skills and methodological skills. A paper titled “Are they Really Ready to Work: Employers’ Perspectives on the basic knowledge and skills of new entrants to the 21st Century U.S. Workforce” (2006) highlights the basic and applied skills employees are on the lookout for. Of particular interest are the set of applied skills which include but are not limited to critical thinking, teamwork, leadership, professionalism and social responsibility. In India, The Ministry of Skill Development and Entrepreneurship is liable for the skill development among the youth in the country, building the vocational and technical training framework work for youngsters, skill up-gradation, building of new skills, and innovative thinking not only for existing jobs but also jobs that are to be created. Different vocational courses are introduced to improve the skill set of youth in India.

**Through the newly created market, we became the producers of good.**

*Post Industrial society needs more college graduates with advanced knowledge who can help develop and advance technological change (Bell, 1973).*

Advances in innovation, moves in the workforce, and financial instabilities drive many working grown-ups back to class to complete degrees or to gain extra or propelled degrees. The phenomenal quickened speed of the information age
deletes the education finish line, transforming knowledge workers into “lifelong learners” (Axelson, 2005; ETS, 2003; Tyler, 2005; University of Central Florida, 2006). Youth entering the workforce will be required to learn new abilities for new occupations that still yet to enter in the workforce. This requires a dedication towards preceded with proficient development, which might be through formal instruction or casual learning openings. The ability and aptitude to learn freely is called lifelong learning and it is a skill employer's view as essential during recruitment. What is desperately required, at that point, is an evaluation that will determine whether (or to what extent) youthful grown-ups have acquired the mix of technical and cognitive skills needed to be productive members of an information-rich, technology-based society” (Williamson, Katz, & Kirsch, 2005).

Today youth are processing with the digital information. According to a report by the Internet and Mobile Association of India (IAMAI), 66% of the 180 million Internet users in urban India routinely access social media platforms. College students (33%) frame the biggest statistics of active social media users in India. Social Media Usage among students has been widely increased. What kind of skill set they have developed by being in the social media? Is there digital divide persists in rural areas? What the rural students do online? How they handle the digital information? Do they have cognitive and critical approach towards accessing information? A proper investigation is required to address the above raised questions. Hence the research aims to urge the importance of digital information literacy to the students who roams in a digital environment. It also insists to assess the Digital Information Literacy skills of a student and find the social media practices of the student. This research will also find out the influence
of social media practices and other factors on Digital Information Literacy (DIL) skill acquisition of a student.

1.5 PURPOSE OF THE STUDY

The main purpose of the study is to develop a tool to assess the digital information literacy. Assessing the skills of Digital Information and using the score for their job opportunities will make the youth more productive members of an information-rich, technology-based society. Digital Information Literacy skills need to be assessed thoroughly to reveal how digital information is exploited and discerned by the young people. It also paves way for developing a tool in Indian context to test the DIL skills of students to rate their chances of employability to rural youth. This extends the importance of this research to other colleges to best prepare students with Digital Information Literacy. The research study, considering the significance of this century leaning towards Digital Information, seeks to develop a tool in order to assess the Digital Information Literacy skills of college students. It also tends to identify the factors that influencing the Digital Information Literacy skills acquisition. This research aims to assess the Digital Information Literacy of rural students with the developed tool. The researcher has selected southern districts of Tamil Nadu for the study.
1.6 OBJECTIVES OF THE STUDY

The broad objectives of the study are:

- To find out social media practices among the college students
- To develop a tool to evaluate Digital Information Literacy skills Level (DIL) of college students
- To assess the student’s proficiency in accessing information online
- To assess the student’s computer proficiency in organizing and presenting Information using a computer
- To explore the influence of social media practice on Digital Information Literacy (DIL) skill of students
- To identify the factors that influence the DIL skill level of a college student

A set of research questions were formulated under each objectives are discussed follow. This study tries to answer all these research questions using a mixed methodology research design

To develop a tool to evaluate the DIL Level of college students

- What is Digital Information Literacy in the Indian Context?
- Which is the suitable method for DIL-literacy assessment?
- How can we evaluate a student’s DIL skill?

To assess the students online proficiency in accessing information

- How do they use web browsers and access data/information?
- How do they use search engines?
- Do they possess the skills of sharing information online?
To assess the students computer proficiency in manipulating the data and presenting the legal aspects of the Information accessed

- Are they familiar with application softwares?
- How do they design, present and manipulate digital data/information?
- How do they store digital data/information?
- Are they familiar with the legal aspects of presenting data/information?

To identify the factors that has influence on DIL skills of a college student

- Does frequent social media access have influence on the acquisition of DIL skills of a student?
- Do social media practices have an influence on the acquisition of DIL skills of a student?
- Does the institution they study in influence their acquisition of DIL skills?
- Do the stream (Arts or Science) they study in influence their acquisition of DIL skills?
- Does their year of birth influence their DIL skills?
- Does the device used have an influence on their DIL skills?
- Does the SES of a student have an influence on DIL skill of a student?
- Is there a gender difference among the DIL skills of a student?
KEY TERMS

**Information literacy**: Information Literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."

**Digital Information Literacy**: Digital Information Literacy (DIL) is the capacity to perceive the requirement for, to get to, and to assess electronic data.

**Social Media Practices**: Social Media Practices are defined as what kind of practices or activities one do in social media tools such as social networking websites, blogs, Photo & video sharing websites and other networks.

**Task Based Assessment (TBA)**: TBA is defined as assessing the skills of an individual through a series of tasks.

**Socioeconomic status (SES)**: SES is a financial and sociological consolidated aggregate measure of a man's work involvement and of a person's or family's monetary and social position in connection to others, in view of salary, training, and occupation.

**Gender Difference**: the term gender differences alludes to normal gathering contrasts amongst guys and females that are apparently in light of sexually monomorphic (the same between the genders) organic adjustments.
1.7 CHAPTERIZATION

“Chapter 1: Introduction” presents the background of the study, about Internet usage in India, Information Literacy in India, importance of Digital Information Literacy and other factors are discussed. Statement of the problem, Purpose of the study, objectives and keyterms related to the study is given.

“Chapter 2: Review of Literature” presents the reviews of related literature to get to know is unexplored and thus identify an area for this research.

“Chapter 3: Methodology” presents the tools and techniques used for the present study through different data collection methods. This chapter discusses the mixed methods adopted for the study.

“Chapter 4: Interpretation of Results” presents the results of Delphi method, quantitative survey and qualitative in-depth interview results.

“Chapter 5: Findings and Discussion” presents the constructed Digital Information Literacy tool and Digital Information Literacy skills of college students in South Tamil Nadu.

“Chapter 6: Conclusions” presents the findings and conclusions arrived at after the analysis and interpretation, it also presents the limitation of the study and the emergent suggestions for future study.