

Rethinking the Disability Digital Divide in Relations to Visual Disability in Sri Lanka

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Abstract

People who are blind or visually impaired do not have equal opportunities to access information technology and internet access compared to the non disabled population in Sri Lanka. The level of usage of ICT by the disabled and non disabled are different in developed and developing countries. The purpose of this study is to find the reasons behind the digital divide among the people with visual disabilities in Sri Lanka and proposed solutions to eliminate digital divide among the Sri Lankan visually impaired differently able community.

This study was conducted based on the literature behind the Digital divide, social construction of disability, The digital age, the development of information technology and Internet related technology and Other countries and Sri Lankan corporate policies related to information technology and main problems and issues faced by the visually impaired people when accessing ICT and Internet. In order to collect information on the Sri Lankan disability digital divide, interviews were conducted with a range of government representatives and more than 75 visually impaired civil and military computer users in Sri Lanka.

As a result of this study it has been indicated that compared to other developed nations, Sri Lanka has also addressed the issue by implementing Nanasala project through ICTA and improving the telecommunication infrastructure with in the country and many other projects via private and public institutions with in the country. Survey results indicated that many Sri Lankans with disabilities are reluctant to use Information technology due to poverty, lack of awareness, lack of interest and their social and cultural backgrounds and also as their first language is not very well supported by the computer system. These factors are highly co-related with digital disability in Sri Lanka.

Conclusions and recommendations are made by proposing implementation of several projects under the supervision of the central government. They are to introduce a web portal for visually disabled people with language support, more training and awareness of the ICT among this community, encourage and develop screen reader software which can support first languages such as Tamil and Sinhala.

Key words: Digital age, Digital divide, Disability, Digital accessibility

Introduction

Disability Definitions

According to the USA Disability Discrimination Act (DDA) , a disabled person is someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities. This can be cause by having mental or physical impairment. The impairment has an adverse effect on their ability to carry out normal day-to-day activities or the adverse effect is substantial and long-term (meaning it has lasted for 12 months, or is likely to last for more than 12 months or for the rest of the person's life).

The World Health Organization defines Disability as follows: "Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives"

There are three dimensions of disability according to the Disabled world news (2009) . They are the International Classification of Impairments, Disabilities and Handicaps (ICIDH). A new version of the ICIDH has been drafted. It has amended due to criticism of the first ICIDH. There are many countries supporting to the WHO and other non government and government organizations for the welfare of disabled communities. One of the major developments is the more specific recognition for the social construction of the third dimension of disability. It is being proposed that this third dimension be renamed 'participation'.

Technology Usage in the World

Technology has change people life. The use of internet has become the highest requirement of the day-today activities. According to the internet world stats (2013) reports Asia is having 27.5 % estimated users.

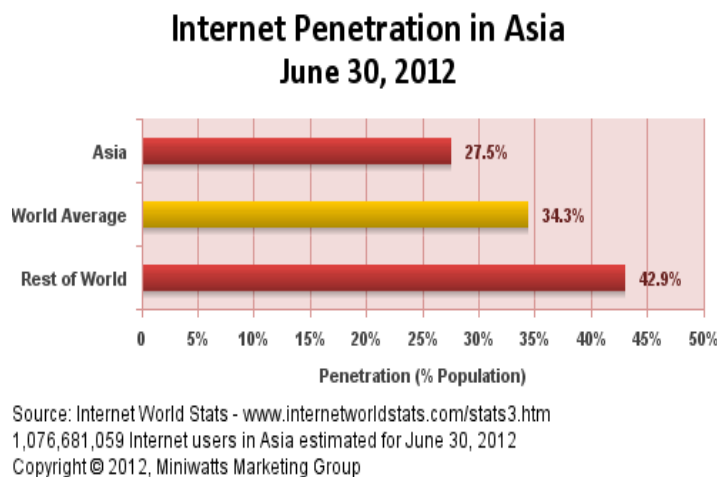


Figure 01: Internet Penetration

Technology usage of Sri Lanka

Sri Lanka is a country with the population of 21,481,334 (2012) . According to the statistics , there were 3,222,200 internet users and 515,720 face book subscribers in the end of 2012 . This is the use of internet among the both able and disabled community in Sri Lanka. China, India and Japan are the highest internet users in the Asian reagan and the Sri Lanka becomes the 18th in the region.The main reason behind this drawback is the civil war which was dragging for

three decades in the Sri Lanka. The Sri Lankan government has implemented many ICT projects and telecommunication infrastructure developments after the end of civil war in 2009. Sri Lanka telecom regulation commission, the information and communication technology agency and Sri Lankan universities (specially university of Colombo and Moratuwa) have done many innovative and sustainable projects to increase the computer literacy rate and development of ICT infrastructure in the Sri Lanka.

Relationship of use of Technology and Disability

Sri Lanka is a country which suffered from a civil war. Many civilians became disabled due to the war other than the birth and accidental disabilities. Disability is a one main reason for world digital divide according to the world definitions of Digital Divide. Goresky and Park (2009) also have defined disability digital divide as discrepancies in the physical access to computers between disabled and non-disabled people.

Purpose of the Study

The disability digital divide has not taken in to a much consideration among the Sri Lankan researchers. Due to that, this research is focusing on re-thinking the disability digital divide in relations to visual disability in Sri Lanka.

The purpose of this study is to find the reasons behind the digital divide among the people with visual disabilities in Sri Lanka. It is proposing a solution model to eliminate disability digital divide within the Sri Lankans with visual impairments.

This study focuses on three research questions such as; 1.) Are there any special benefits for Sri Lankan visually disabled community by using information technology and web related technologies?, 2.) What are the problems and issues faced by them when they are accessing those tools and technologies?, 3.) How can these problems and issues could be solve in national level and organizational level?.

Research Methodology

This research study has a number of inter-related objectives set within the context of use of ICT in blind community in Sri Lanka. This study mainly focuses on research objectives to find out reasons why Sri Lankan blind community is having difficulties of accessing information technology and information systems. It is further studying current problems and issues associated with Information technology and systems in relations to visual disabled community in Sri Lanka in relation to eliminating disability digital divide issues in Sri Lanka.

Research Strategy

Research strategy used for this study is mixed approach. Field and literature survey has been conducted to do this research. This research consists with three phases. In the first phase find out the difficulties faced by the differently abled community. A field survey has been conducted in this phase. Second phase also included a field survey to find problems and issues faced by the differently abled community. In the third phase field and literature survey has been conducted. The literature survey identified that how the other countries has sort out the above problems and issue.

Total population included with the sample taken from Sri Lankan Army Soldiers who have followed computer training in RanavirusewanaRagama and abimansala Anuradhapura. The

research interviewed trainers and government representative also. Initial plan is to select sample as 100 and finally limited to 65 differently able persons. This community is including male, females and temporary and permanently disabled people. Reasons to select this research approach is specially because the computer use in differently able community is unknown.

Data Collection

Data collected for this study based on two approaches. The primary data collection through observation and interviews done at Ranavirusewana Ragama. Participants are excluding with mentally disorder differently abled people. Total number of computers are fully allocated during the morning time. Most of participants were more interesting on games and tele dramas. The next data collection method was interviewing the participants. Different levels of participants were interviewed for this research. They are differently able computer users, computer trainers of differently able users and senior administration of them. In addition to that different government officers who are working for this community and computer expertise also interviewed. Face to face interviews conducted to get this information and all the information recorded in manually for further analysis.

Framework for Data Analysis

Collected data were analyzed based on qualitative approach according to five themes. Analysis techniques used in this research were co-relation with use of technology and poverty, lack of awareness, Lack of interest, Social and cultural background and language issue.

Literature Review

The Digital Age and Digital Disability

According to the literature the digital age is a period in human history characterized by the change from traditional industry that the industrial revolution brought through industrialization, to an economy based on information computerization. According to the Dobransky (2012) The increasing spread of the Internet holds much potential for enhancing opportunities for people with disabilities. However, scarce evidence exists to suggest that people with disabilities are, in fact, participating in these new developments. Will the spread of Information technologies (IT) increase equality by offering opportunities for people with disabilities? Or will a growing reliance on IT lead to more inequality by leaving behind certain portions of the population including people with disabilities? With considering the above arguments is it proven that disabled people are not having equal opportunities to accessing information technology.

Sri Lankan co-operate policies on Disability

In the United Kingdom, for example, people were either discouraged or not actively encouraged to enter the workforce. In 1958, the British government realized the potential economic benefits in having people with disabilities in the workforce. As a result, sheltered workshop were introduced and shared accommodation was encouraged (Schlesinger & Whelan, 1979). Other countries, including Australia, implemented similar policies shortly after the British Government initiative. In Sri Lanka it has not concern Government Policies at this time.

As a result of many years the disability movement in Sri Lanka has been requesting from the government a national policy on disability in the year 2003 National policy on disability was approved. This was the initial consideration for this community on Technology. Later in 2012 National action plan for disabled was taken in to consideration in Sri Lanka.

Current Sri Lankan initiation for visually disabled

Nanasala Project Through ICTA

The e-Sri Lanka initiative uses Information and Communication Technology (ICT) to develop the economy of Sri Lanka reduce poverty and improve the quality of life of the people. The vision will be realized through six strategies such as ICT Policy, Leadership, and Institutional Development Programme, The Information Infrastructure, Re-engineering Government, ICT Human Resource Development, ICT Investment and Private sector Development and e-Society.(ICTA,2012). According to the Nanasala(2013) this project is one of the projects implemented under the e-Sri Lanka Initiative. ICTA has incorporated it under the “Nenasala” label to introduce several models of the telecentres or knowledge centers to be established in all parts of Sri-Lanka to spread ICT services to the rural and semi-urban population. ICTA are having four type of Nanasala such as 1.) Rural Knowledge Centres, e-libraries, Distance & e-learning centers and Tsunami camp computer kiosks. Most of the disabled civilians in the rural areas can access Internet and ICT through this Knowledge centers.

Improving The Sri Lankan Telecommunication Infrastructure

Country Telecommunication infrastructure is a one main concern to bridging the digital divide in a country. Sri Lankan initiation has taken to eliminate the digital divide initiation has shown the positive result outcome in the year 2012..Accoding to TRC(2013) statistics given below shown the rapid growth in the internet and E-mail Subscribers positive growth in the area.

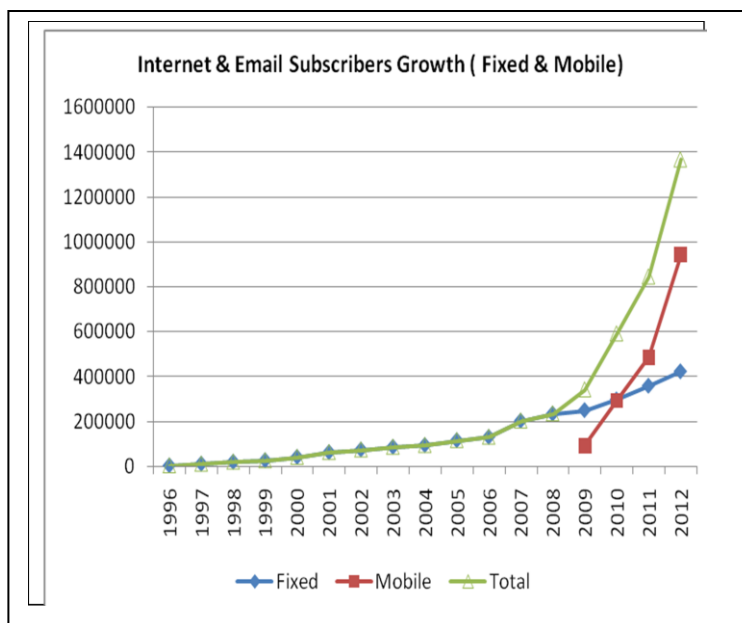


Figure 3: Internet and Email Growth & Email Subscribers (Fixed& Mobile)

Other projects (public/private institution)

Other than the ICTA projects initiated by the government many other projects has been implemented to eliminate the Sri Lankan Digital disability. They are 1.)Providing operational expenses to an IT education centre (Horizon Lanka Foundation -<http://www.horizonlanka.org/>) in Mahavilachchiya, Anuradhapura - North Central Province. 2.) Establishing 12 IT education facilities in rural schools by providing over 100 computers and ancillary equipment. 3.) Assisting to develop and operate a rural IT centre (LakAruna Foundation -

<http://www.lakaruna.org/>) in Hingurukaduwa, Passara - Uva Province, currently serving over 100 children. 4.) Establishing a rural computer centre in a tsunami affected settlement in Bandaragama, Panadura - Western Province

Findings

As a result of this study it has been indicated that compare to other developed nations Sri Lanka also addressed the issue by taking initiation to eliminate the issues. Current initiations has been implemented to reduce the Sri Lankan Digital Divide in generally but less on focusing in relation to visual disability.

Problems associated with Disability Digital Divide in Sri Lanka in relation to Visual Disability

According to the research findings four main problems associated with digital divide among the blind or visual impairment are identified. They are very much similar to other disabled category of people. Most considerable problems and issues are Poverty, Lack of awareness, Lack of Interest, Social and cultural background and language related issues. These factors are highly co-related with the disability digital divide.

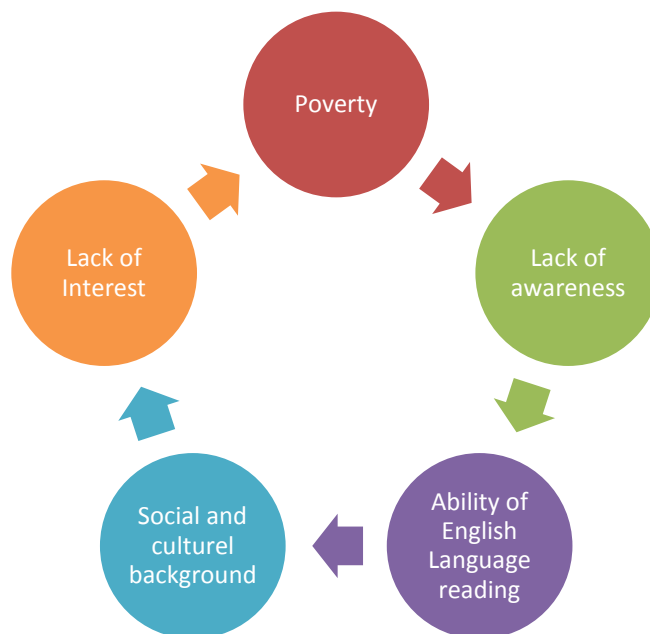


Figure 3: Current Problems and Issues

Table 01: Summary of Responses

Factor	Responses	Percentage (%)
Poverty	17	22.6666667
Lack of awareness	10	13.3333333
Lack of Interest	15	26.6666667
Social and cultural background	16	21.3333333

language related issues	17	22.6666667
Total	75	100
<i>Non Responses</i>	15	

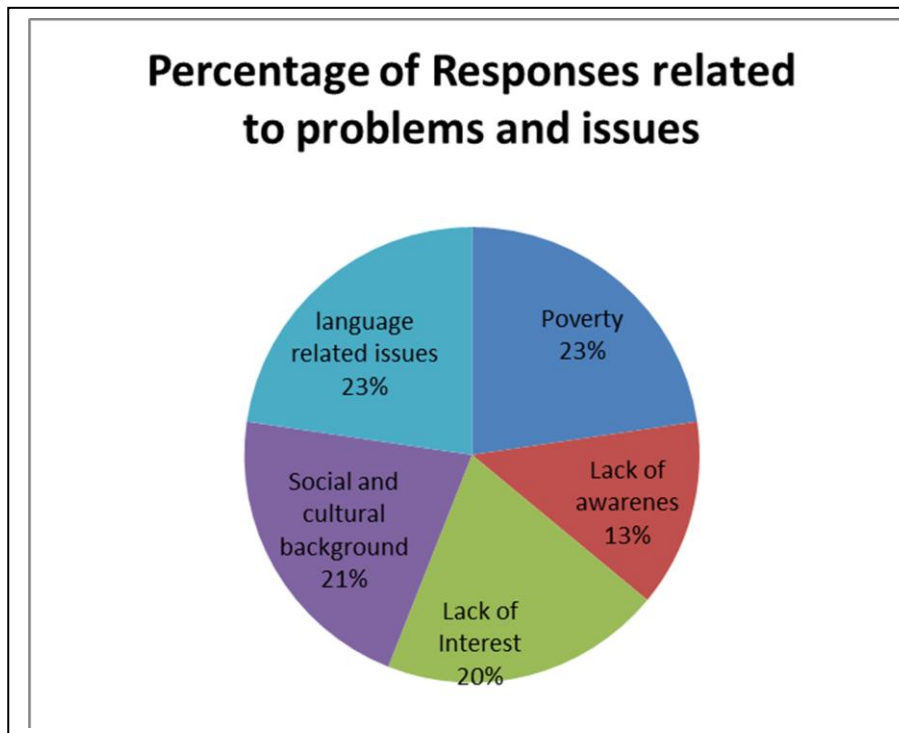
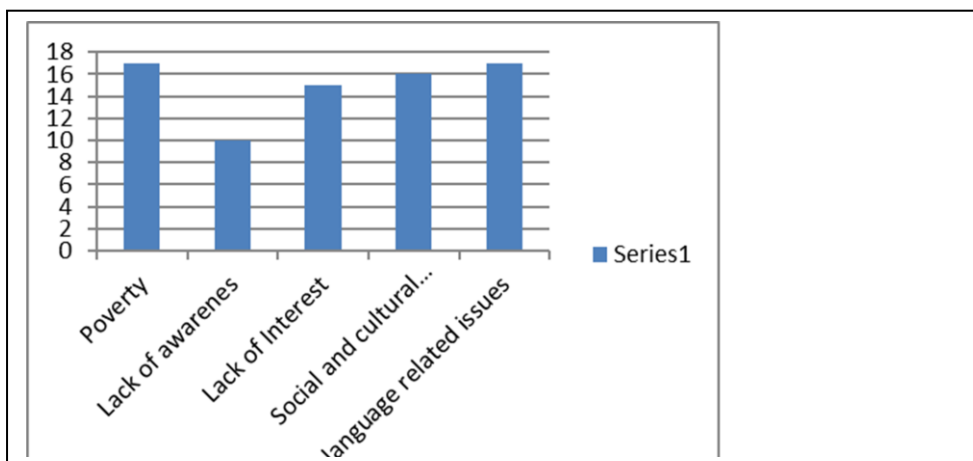


Figure 4: Summary of responses



Poverty

Poverty

According to the survey data analysis it is indicating that 23 % of them are believing that they have some financial difficulties to use information technology. Therefore disability digital divides cause due to this factor. In addition to that there are not enough funding resources to use genuine licencesoftwares. Due to the resonantly introduced Data Protection Act , use of pirated

software have decreased in Sri Lanka. Therefore blind community is facing difficulties to access some professional systems.

Lack of awareness

Awareness becomes the largest issue. 13 % of responses agree that this become an important consideration to have Disability Digital Divide. This will basically happen due to the lack of proper trainers availability on this subject. Very few people have trained to give computer training to differently abled computer users. Specially in community with visionary impairments need some special training to use technology.

Lack of interest

27 % of them have selected that Interest will be a cause for disability digital divide. Most of blind users are having difficulties to select and type different URLs. Due to this, most of them are only accessing limited number of web sites. Therefore lack of web portal may cause for disability digital divide. In addition to that it is indicating that most of trainings which they have taken were not directly relating to their Jobs. Therefore they are not much interesting on learning since they are not seen high advantage on that. It is indicating that the technology trainings and their Jobs are having a relationship.

Social and cultural background

According to the result of the study 21 % of responses agreed that their social and cultural background will related to use of ICT technology and it will cause the disability digital divide. In country like Sri Lanka social and cultural backgrounds are very closely attached to human activities. Therefore influence of this will effected to digital disability digital divide.

Language related issues

Result indicated that 23 % of them are believing that Language required to use new technology become a very important cause for Disability Digital Divide. This respondent indicated that screen reading S/W available today is supporting only for English language. There are few new Language supporting software have developed by the university of Colombo. But they are not much user-friendly systems.

Conclusion and Recommendations

The current disability digital divide is preventing people who are blind or vision impaired from accessing computers and the Internet. There for it is recommending several implementations to eliminate disability digital divide. They are : 1.) the creation of an effective communication system between developers and end users, 2.) resolving issues associated with ineffective and costly assistive technology, 3.) the creation and implementation of disability-specific information technology government policy, 4.) research into new initiatives which could reduce poverty and improve employment opportunities for people who are blind or vision impaired through the government agencies, 5.) introduce e-trading and e-commerce facilities among the blind community and 6.) take some initiatives which would improve educational opportunities for people who are blind or vision impaired.

It is proposing several projects under the supervision of the central government in addition to the above implementations. They are 1.) introduce a web portal for visually disabled people with language support according to the W3C accessibility guidelines, 2.) more training and

awareness of the ICT and use of assistive technologies among this community, 3.) encourage and develop screen reader software which can support mother language such as Tamil and Sinhala and 4.) awareness of tele center campaign with in the villagers are consider as some guidelines.

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