IMPACT OF DIGITAL DIVIDE ON LEARNING

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ABSTRACT

Digital divide is a social discrepancy or disparities referring to the differing amount of information between those who have access to information communication technology and those who do not have access. Digital divide has the following impact that affect learning, those students who cannot afford or use technology effectively tend to lag behind in their academic pursuit that requires the use of technology, thereby creating loophole and decline in acquiring information technology skills. It also hinders effective teaching and learning communication and information discrimination amongst teachers and learners. The researchers suggest that there should be free internet access to students and schools to remedy the extent at which digital divide affects learning. Based on the findings of this study some recommendations are made among which is multimedia rich learning modules and other educational websites should be made available to schools, colleges, communities and suburbs for in-service training on the use of ICT.

Keywords: Digital divide, learning, Impact.

INTRODUCTION

In a society where knowledge -intensive activities are an increasingly important component of the economy, the distribution of knowledge across the population is increasingly linked to stratification. The mass diffusion of the internet across the population had led many to speculate about the potential effects of the new medium on society at large. Enthusiasts have heralded the potential benefits of the technology suggesting that it will reduce inequality by lowering the barriers to information allowing people of all backgrounds to improve their human capital, expand their social networks, search for and find jobs, have better access to health information and otherwise improve their opportunities and enhance their life chances.

In contrast, others caution that the differential spread of the internet across the population will lead to increase in inequalities or divide improving the prospects of

those who are already in privileged positions while denying opportunities for advancement to the underprivileged.

Digital literacy computer skills are now a requirement for all college students but due to the divide, minorities or underserved students from low-income families may not be competitive candidates or be accepted into college with insufficient technology skills. Even students who are accepted into college may struggle to complete their studies due to a lack of technological skills. Access to Information and Communication Technology (ICT) varies considerably across the globe. Although efforts have been made to close this digital divide, there remain substantial inequalities in access to and use of ICT in education. Digital divide is the discrepancy between those who have the skills, knowledge and abilities to use the technologies and those who do not. The digital divide can exist between those living in rural areas and those living in urban areas, between the educated and uneducated, between economic classes and on a global scale between more and less industrially developed nations.

The factors causing the digital divide include:

- Technological infrastructure
- Cultural values
- income differentials
- Geographical Constraints
- Fear of technology
- Socio-economic aspect (Age, Education, ethnicity) and;
- Lack of motivation

CONCEPT OF DIGITAL DIVIDE

Digital divide is the discrepancy between those who have the skills knowledge and abilities to use the technologies and those who do not. It is the discrepancy in access to information technology. It can also be referred to as "digital split" which is an economic inequality or gap between groups, broadly construed, in terms of access to, use of, or knowledge of information and communication technologies.

Relating Digital Divide to learning, is the gap between those students who have access to digital technology at home and those who do not. Thus "information haves" and

"information have-nots". This divide is caused by inadequate capital to purchase technology resources by parents. Also one of the digital divide issues pointed out by Galuszka, (2007) is the inequitable distribution of technology resources such as telecommunication and broadband by the government so that urban, suburban and rural schools can have equal opportunities to implement educational technologies in their classrooms and across their curricula. According to world English dictionary digital divide is the informal gap between those people who have access and those who do not.

DIMENSION OF THE DIVIDE

According to (Norris, 2001) digital divide is distinguished at three levels

- **The Global Divide:** The global divide is the divide which encompasses differences among industrialized and lesser developed nations.

- **The Social Divide:** This is the divide which points to inequalities among the population within one nation.

- **The Democratic Divide:** This divide refers to the differences among those who do and do not use digital technologies to engage and participate in public life.

Wilson, (2000) took this classification a step further by identifying four components of full social access:

- **Financial Access:** Which indicates whether users (individuals or whole communities) can afford connectivity?

- **Cognitive Access:** Which considers whether people are trained to use the medium, to find, and evaluate the type of information for which they are looking for.

- **Production of Content Access:** Which looks at whether there is enough material available that suits user's needs?

- **Political Access:** Which takes into account whether users have access to the institutions that regulate the technologies they are using.

Warschauer, (2002) has also offered an alternative approach suggesting that in addition to the physical sides of access, other factors such as;

- Content

- Language

- Literacy

- Education and institutional structures must also be taken into consideration when assessing the level of information and communication technology use in a community.

There are factors beyond mere connectivity that need to be considered when discussing the potential implications of the internet for inequality. In addition to relying on basic measures of access to a medium, the following measures are considered:

- Technical means (quality of the equipment)

- Autonomy of use (location of access, freedom to use the medium for one's preferred activities).

- Social support networks (availability of others one can turn to for assistant with use, size of networks to encourage use).

- Experience (number of years using the technology, types of use patterns).

These four factors together contribute to one's level of skill.

- Skill is defined as the ability to efficiently and effectively use the new technology to produce goods and render services.

- Information technology refers to the use of computers to access and share information. It includes the implementation, management, design and research of the system including computer hardware and software (Information Technology Association of America, 2007).

The above mentioned factors will guide the analyses of digital divide at the individual user level.

- **Technical Means:** For internet use, several dimensions of equipment quality are relevant to questions of equal access. People who have access to top quality computers with good and reliable internet connections at home or at work are much more likely to exhibit high levels of sophistication than those without

access to such technical resources. Better software and faster connection are the infrastructural basis of having access to all that the web has to offer. When using outdated equipment, time may be necessary to reach online resources resulting in fewer opportunities for users to acquaint themselves with and explore varied corners of the web. Users may become frustrated by long download times and the inability to access certain sites potentially leading to less enthusiasm towards the medium and less time spent exploring its features.

- **Autonomy of Use:** Access remains easiest for those who are connected through home or work computers. There are differences in how easily people reach libraries quickly (e.g. Do they live close enough not to require substantial time and monetary commitments to go there), and whether they are free at times when these resources are available (e.g. Do their work or family responsibilities make it difficult to capitalize on such resources). Regarding on-the-job access, those with restrictions on their work, not to use computer will not have the freedom to enhance their online skills due to limitations placed on them by their "employment environments. These differences in autonomy of use are likely to influence people's level of web use. Those who have easier access to resources and more freedom to use them are likely to extract more from the medium.

- **Social Support Network:** The diffusion of innovations emphasizes the importance of social support   network in the spread of new technologies. Those with exposure to innovation in their surroundings are more likely to adopt new technologies such as personal computers (PC). The   availability of friends and families who are also internet users provides support from problems encountered while using the medium and is also a source of new knowledge via advice and recommendations. It is also a source of encouragement to go online as there are more people with whom to communicate and share. For online skills in particular, this implies that people who are able to draw on their social contacts for information on how to use the medium will learn more quickly and will be exposed to a broader repertoire of online services than those that have few people to whom they can turn for advice with their web use.

- **Experience:** Experience is a relevant dimension to consider because it tells us whether people are investing time in a technology to become familiar enough with it for convenient and efficient use. The amount of prior experience people

have with the internet is likely to affect their online actions. People who require use of a computer and online resources for their job or school will have invested time in acquiring higher level skills in this activity as the acquired knowledge is necessary to perform their work. People who spend more time online-whether at work or any other locations will likely acquire more knowledge about the web and thus will have better online skills.

- Finally, people who have been internet users for longer period are expected to be better at finding information online as they have more experiences to draw on.

SOCIAL FACTOR

It is important that the digital divide does not lead to social exclusion. There should not be groups of people who cannot benefit from the digital technology because of lack of access or poor skills. Originally, the digital divide was attributed to internet access. Now, most people have access to the internet thanks to libraries and internet cafes etc. We now think about the digital as those who do, and those who don't have the skills to use the internet appropriately. Many of today's jobs require ICT (Information Communication Technology) skills and qualifications. People without an education in ICT are at a disadvantage and are unable to get work.

Social factors that contribute to the digital divide include:

- ❖ Age
- ❖ Gender
- ❖ Family structure
- ❖ Education
- ❖ Ethnicity
- ❖ Motivation.
- ❖ **Age:** It thus appears that young people feel more comfortable with the new technology and are able to benefit from it more than older people. Older people are less likely to have a computer and are less likely to be interested in using the internet.
- ❖ **Gender:** Boys use computers and the internet more often than girls.

- ❖ **Family Structure:** Families with children have more computers and internet access than families without.

- ❖ **Education:** In order to benefit from the digital technology, people must know how to use it. Information Communication Technology (ICT) has become a major subject taught in most schools but many adults did not have the opportunity to learn how to use computers when they were in school. The governments of some countries have scheme for education that involve providing hardware and internet access for educational institutions as well as for communities, schools. Colleges and libraries may be connected to internet. The government of poorer countries will not be able to do this.

- ❖ **Literacy Skills are Important for People to Read Web Pages:** Those unable to read well will not benefit from information on the internet. They may only use computers to play games.

- ❖ **Ethnicity:** Different ethnic groups have different attitudes to technology. Many deprived areas of large cities have high numbers of people in differing ethnic groups. This may have an effect on wealth and education. If English is not a first language this may cause problems.

- ❖ **Motivation:** People may not use computers because they are not interested or they may not see any good reason to. Some people have a fear of using computers. These people are called "technophobes". Their fear is usually due to poor ICT skills.

- ❖ **Geographical Factor:** Some people are still unable to gain access to fast ICT, not because they don't have the knowledge or even because they are poor but because of the area that they live. Even now broad band internet, for example, is still not available all parts of Nigeria. With some broadband technologies the quality of the line diminishes the longer the length of the line. So people who are more than 5 kilometers always from a broadband enabled telephone exchange are not able to receive Asymmetric Digital Subscriber Line (ADSL).

In view of these geographical issues households in some areas are excluded from appreciating the full benefits of many online services. They are stuck with an incredibly slow dial-up internet connection which makes it nearly impossible to tap into most multimedia websites and features.

THE ECONOMIC FACTOR

The digital divide is a symptom of deeper, more profound and important divides: income, development and literacy. Fewer people in poor countries than in rich ones, own computers and have access to the internet simply because they are too poor or do not have access to electricity.

Owing a computer would not help someone with more pressing concerns, such as finding food and providing for the needs of their family.

In March 2005, the United Nations (UN) launched the "Digital Solidarity Fund" to finance projects that will address "the uneven distribution, use of new information and communication technologies" and "enable excluded people and countries to enter the new era of the information society". A computer is not particularly useful if someone cannot read and has no electricity, changes in mobile phone technology and digital and satellite media have forced people into updating their devices. In certain elements of society, trends are also determining what brand, type or model is considered as acceptable. For example, peer pressure in teenage circles to have the best and newest phones has put more strain on parents' budgets. Many people simply cannot afford these new technologies and so the gap is widened even further. The main reason individuals and communities don't have access to a computer or up to date internet services are due to lack of or insufficient capital or fund in the economy. Many developing countries struggle to provide adequate telephone lines, PC-hardware and software which are simply too expensive for many people in the developing world.

The socio-economic disparities and parents' perceptions of the importance of technology use may also result in digital divide. If parents do not think technology is an essential tool in the children's education, they may not choose to invest in technology which may eventually negatively affect their children's learning abilities. Also students" educational outcomes in the long term is crucial to ensure that students have equal access to technology. The gap (digital divide) between children from low-income families and others may negatively affect one's education pipelines.

CULTURAL FACTOR

While much of the work addressing the digital divide between the "hares" and "have-nots" in the online world has focused on the important task of providing access to hardware, software and basic computer literacy, there is an additional issue the cultural

digital divide that has received far too little attention. Research increasingly shows that one of the essential ways to tackle digital inequalities is by address the fact that technologies are always created with cultural biases built-in that limit for their use.

Significantly, lack of representation or misrepresentation of particular racial, ethnic and cultural groups in the media has long been shown to have profound negative psychological effects on the groups. This misrepresentation has strongly adverse implications for social justice and equitable social policy because of the broad consumption of these media by the general public and policy maker's progress in closing various digital divides need to include improving the quality and quantity of diverse cultural content in new media like the web and the video games.

Some other factors relating to culture include expectations and norms relating to gender roles and impact upon use. Internet has also filtered through the social strata such as the young, the brainy, middle class and low class. The variation in attitudes, use and experiences with ICT could exist between groups from various cultural backgrounds and strong family values.

FEAR OF TECHNOLOGY: Many people do not use technology because

- They are not confident in their own ability to use computer skills.

- They fear that others will laugh at their attempts therefore it is easier not to try.

- They think they will cause a computer problem as they experiment and therefore prefer not to try.

- They have heard or read news or report about computer fraud, internet scan sand identity theft.

LACK OF MOTIVATION

Many people are not prepared to put in the time and effort to learn something new. Some people link ICT with useless activities computer game playing, eyes damage and other more sinister themes. Modern operating systems windows are much easier to use than they were fifteen years ago. However, they still require a certain amount of effort to grasp.

IMPACTS OF DIGITAL DIVIDE ON LEARNING

Digital divide posses a significant impact to learning.

- Digital divide negatively affects learner's abilities in the sense that those students who cannot afford or use technology effectively tend to lag behind in their academic pursuit that requires the use of technology.

- Digital divide creates loophole and decline in acquiring information technology skills. Some schools do not have internet access and common educational technology used to facilitate learning. Hence some schools are unable to teach information and technology skills and take advantage of the vast amount of information available on the web.

- Digital divide hinders effective teaching/ learning, communication and information dissemination among teachers and learners. Students who have the skills and access to use the technology tends to explore more information from the web and have more social identity than those students who barely use the computer or have the skill and access to information communication technology.

- Digital divide denies learners of what is happening around the globe due to lack of awareness, lack of access to information and communication technology, inability to purchase and explore the new technology services which help to develop one's potential and economic growth.

SUGGESTIONS TO REMEDY THE EXTENT TO WHICH DIGITAL DIVIDE AFFECTS LEARNING

New instructional methods could help to mediate some of these obstacles for students behind the learning curve.

- It includes just-in-time learning, open-source and free software applications, exhort monitoring (both online and face-to-face), and access to multimedia rich learning modules available through free YouTube, Apple iTunesLL, and other educational websites (Berger & Trexler, 2010).

- Policies should be improved so that schools and low-income families can get sufficient support at home from private donors and the government.

RECOMMENDATIONS

❖ The haves and have nots should be made equal in education i.e. the government should allocate subsidies to the rural dwellers and even to public schools in order to get web access and related communications technology. This will help to close the gap between poor and middle class households.

❖ Multimedia rich learning modules and other educational websites should be made available to schools, colleges, communities and suburbs for in-service training on the use of ICT.

❖ Policies should be improved so that schools and low income families can get sufficient support at home from government and private donors.

❖ Wireless technology (wi-fi) should be provided to the rural areas in the different parts of the world to enable them go online and learn computing skills

CONCLUSION

❖ Digital divide in its simplest meaning is the discrepancy in access to information technology. It can also be described as information or digital haves and digital have-nots.

❖ The loop created by this divide in information and communication technology is so enormous that it has caused decline in globalization of the third World underdeveloped countries). The prevailing approach to the "Digital Divide" focuses on a binary classification of internet use merely distinguishing those who are connected from those who do not have access to the medium. Effective access to the internet means much more than simply having a network connected machine.

REFERENCES

Berger & Trexler, (2010). The effects of digital divide. The information society. Pg. 23, 345-356.

Galuszka, N., (2007). The Impacts of the Digital Divide. Information Technology Association of America (2007).

http://www.digitaldivide.org. Retrieved from net on 17th of March, 2016

http:www.dividedbytechnology.co.uk/impacts.html. Retrieved from net on 1st of April, 2016

http://www.itu.int/osg/spug/puh1ications/worldinformationsociety/2007/report.html. Retrieved from net on 5th of April, 2016

http://www.digita1divide.org. Retrieved from net on 7th of April, 2016

http://www.dividedbytechnology.oo.uk/impacts.htm1. Retrieved from net on 7th of April, 2016
http://www.itu.int/osg/spuVLpub1ieations/.Worldinformationsociety/2007/reporthtml. Retrieved from net on 7th of April, 2016

Kuktan, A., (2003). Digital Divide to Digital Opportunity. Scarecrow Press.

Norris, P., (2001). Digital Divide and the Internet World Wide. London Cambridge University Press.

VanDijk, J. & Hacker K., (2003).The Digital Divide as a Complex and Dynamic Phenomenon. The information society. Pg. 19, 315-326.

Warshauer, K., (2002).Approaches to the digital divide and information communication.

Wilson, M., (2000).Digital divide and its social access. London Cambridge University Press