

Digital Skills Acquisition and Girls' Interest: An Initiative to Bridge Digital Gender Divide.

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Abstract— Digital skills sweep is known to have much more participation and practice from the male gender, it is not that female gender groups are not interested but the percentage in Nigeria is known to be minimal compared to other developed countries. This study examines the extent to which digital skills has influenced girls and women between the ages of thirteen and forty and it also explores the extent of their interest in digital world by exploring what they use their digital devices for. Ten schools (both senior secondary schools and higher institutions) were selected within Ido Local Government and Ibadan North Local Government area in Oyo State. Data were collected, coded and analyzed using both descriptive and inferential statistics. The study reveals that 87% of the girl respondents and 94% of the lady respondents use their devices for social media activities only while 2.2 % of the girls and 14.8% of ladies use their device for digital marketing. The findings confirm that 5% of girls and 27% of ladies has interest in web development while none of the girl respondents, that is 0% of the girls and 72.8% of the ladies haunt for jobs on their devices. The study further confirms that 0.9%, 6.8%, 3.0% and 24% of the girl respondents uses their devices for research purpose, designing, shopping and making friends while the ladies responded with 13%, 13.8%, 42.2%, and 56.8% for each purpose respectively. The result further shows that certain reasons such as good jobs 24% of girls and 92% ladies, change in career 0.8% of girls and 14% of ladies, digital evolution 2.2% of girls and 16.3% of ladies, side hustle 12% of girls and 74.9% of ladies and global relevance 11.8% of girls and 28.7 of ladies has forced the female gender (respondents) to learn digital skills. It was concluded that girls underestimate the need and importance of digital skills but rather they engage more in social frivolities with their digital devices.

Keywords: Descriptive Statistics, Digital, Digital Devices, Digital Skills, Gender Divide, Girls,

1 INTRODUCTION

Digital skills are broadly defined as the skills needed to “use digital devices, communication applications, and networks to access and manage information,” from basic online searching and emailing to specialist programming and development. [7]. Majorly, these skills help people communicate and collaborate, develop and share digital content, and problem solving from any remote area all over the world.

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Digital skills are defined as the ability to find, evaluate, use, share and create contents using digital devices such as computers and smart phones [27]. Nowadays, the digital skills required in the workplace are more advanced, and companies expect the vast majority of their employees to have them, not just a selected few. Technology is at the center of our lives and as our dependence on the internet and digital communications increases, our workforce must keep up with the evolving skill demand [6].

United Nations Educational, Scientific and Cultural Organization (UNESCO) [25] defines digital skills as ‘a range of abilities to use digital devices, communication applications, and networks to access and manage information. They enable people to create and share digital content, communicate and collaborate, and solve problems for effective and creative self-fulfillment in life, learning, work, and social activities [5]. Students that learn digital skills not only make themselves more employable but also secure their career and future just by understanding key digital chan-

nels.

Digital transformation is on the rise and affecting every industry at a very high rate, farmers are no longer sowing seeds and harvesting crops, they are using sensors and information technology to automate, monitor and regulate their systems to become more profitable, efficient and sustainable.

Food delivery apps are helping restaurants provide their menu options to hungry people without them having to leave their homes. Real estate which is traditionally a face-to-face industry also now relies on digital skills, virtual walkthroughs are available to their prospects and signing of documents remotely. Virtual excursion is also available for boys and girls in secondary schools to different parts of the world, different types of arduino projects has taken over both home and security services across the whole world.

Digital Skills development is known to have much more interest, attention and practice by the male gender compared with the female gender, it is not that the female gender group is not interested or does not participate but the percentage of their practice in Nigeria is known to be minimal compared to other developed countries.

Innovation is vital for a country's economic growth [21] and a firm's competitive advantage [17]. Nevertheless, how to effectively motivate and nurture innovation remains challenging for most countries and organizations. Socio-economic development cannot be totally separated from digital skill upsurge or expansion and this has been the major reason why involvement in digital skill by every gender is unavoidable. Digital innovations are closely connected to socio-economic development, and this potential towards socio transformation demands that everyone should have access. Prevailing disparities in accessing or acquiring digital skills suggests that many groups or individuals are

hindered by their social and economic circumstances from developing a relationship with digital innovations, where women folks are involved in this discrimination is known to be gender bias.

Research has shown that several digital skills that can make students instantly employable are emerging day by day, some of such digital skills are: Digital Marketing, Web/App Development, Project Management, Software Development, Data Analysis, Data Visualization, Search Engine Optimization, Computer Support, Graphic Design, Virtual Assistance, Artificial Intelligence etc. [5, 6, 13, 22].

Digital skills are either physically or remotely acquired or both, it is not age-specific and you are not restricted to learning only one digital skill, you can learn as many as you want. Online courses are taken to learn most digital skills, and for all certificates are provided.

Most of the digital skills listed above can be acquired by but not limited to the following;

- Taking free online courses
- Using digital devices for your job, hobby and showcase your work online
- Improving your method of communicating with others online
- Increasing your online presence
- Teaching digital skills to others
- Practicing your skills over time
- Following current tech trends

The era of social media activities, email marketing and mobile marketing should be over by now. Innovations should be from data science, search engine optimization, project management, web/app development and graphic designs. This paper shall be exploring more on why women and girls need to develop themselves with digital skills and the opportunities available for them to explore more to gain global relevance and advance in knowledge, this study concluded that Nigerian women and feminist can still go global if the digital skills are brought to their doorstep.

For systematic analysis, this paper would be divided into five sections; following the introduction is the section that deals with relevant literatures that are required for the study, this include the concept of gender digital divide and factors that are responsible for the divide. Section 3 describes the methodology and techniques that were employed during the study. Section 4 presents the outcome of the activities carried out on the study and analyzes the result accordingly. Lastly, section 5 serves as conclusion to the paper and some recommendations were also proffered in the same section.

2 LITERATURE REVIEW

Gender inequality in the physical world is replicated in the digital world. The International Telecommunication Union (ITU) reported that there is a large gap in women and girls' digital adoption and use compared to men and boys because more than 50% of the world's women are offline [2]. However, most data available to quantify this gap focuses on adults only, not children. [2]. This is more pronounced in developing countries, where the internet penetration rate for adult women is 41%, compared to 53% for men [2]. Global System for Mobile Com-

munications (GSMA) found out that 393 million adult women in developing countries do not own mobile phones, and globally, women are 8% less likely to own a mobile phone than men.[1]. There are also stark regional differences. For instance, the gender gap in mobile ownership is much larger in South Asia (23%) and sub-Saharan Africa (13%) [1]

Women are more likely than men to borrow or share mobile phones (often within a household or from a male family member) and are rarely the primary owners of a mobile device [15]. GSMA reports that women are more likely to have simpler feature phones that do not support mobile internet use, and women are 20% less likely than men to own a smartphone. This gender gap in digital access is accompanied by a gender gap in meaningful digital use.

Several studies have found that women tend to use mobiles and the internet differently than men. [1, 2]. For example, limited by less expensive and sophisticated handsets, women use a smaller range of digital services (often primarily voice and SMS). Women also use digital services less often and less intensively, and they access the internet less frequently, for fewer reasons [23].

United Nations Educational, Scientific and Cultural Organization (UNESCO) reported in 2019 that boys use far more digital platforms and services for a much wider range of activities than girls, and they are more likely to use the internet. Roughly 46% of boys use the internet on their phones, compared to 27% of girls. United States Agency for International Development (USAID) in 2020 also discovered that without increased digital adoption and use, girls will have fewer employment opportunities and will face additional barriers to workforce participation.

In many countries, gender inequality means that women and girls have lower levels of education and less practice in using or creating digital content .As a result, women's and girls' digital adoption and use is frequently limited by lower levels of digital literacy, and a lack of confidence [1, 15].

For example, the Web Foundation found that in Africa and Asia women who have some secondary education are six times more likely to be online than women with only primary education or less [24]. Therefore, one can boldly say that inequality in education represents a major contributor to the gender digital divide.

2.1 Importance of Digital Skills for the Girl Child

The world is evolving and technology is gradually taking over the space as most organizations now work remotely. In recent times, it is almost impossible to communicate, work or learn effectively without the help of technology. This recent development has increased the need for persons with digital skills around the world [29].

A data by the Economist Intelligence Unit showed that men remain 21% more likely to be online than women, rising to 52% in the world's least developed countries. This shows that there is a huge difference between boys and girls who have Internet access and use it effectively.

When women and girls have access to Internet, it gives them a better opportunity to expand their horizons by learning new things, starting and growing new businesses, running certified courses as well as imbibing new skills. Digital literacy is important to every girl for the following reasons: [29].

2.1.1 Bridges Gender Gap

The gender gap in digital skills is a global problem, but if every girl can acquire at least one digital skill, we can succeed in bridging the gap. As technology takes over, the need for more digital skilled individuals will be on a rise. So irrespective of your profession or position take up this opportunity, learn a digital skill now!

2.1.2 Digital Evolution

Almost all organizations have a certain percentage of their clients online hence the increased demand for web and mobile app developers, graphic designers, digital sales agents etc. With the level of unemployment in Nigeria, you need more skill to set you apart from the regular stuff. Having at least one of these skills offers you a higher opportunity than anyone with just the regular degree. When you are good at a skill, you will always be relevant.

2.1.3 Enhances Productivity

Having at least one digital skill helps you grow and promote your business in the digital space. You can even decide to be a freelancer and work at your convenience.

2.1.4 Increases Your Chance of Finding a Well Paying Job

If you are looking to get a great job with a mouth watering offer then your best bet is acquiring digital skills. As long as you are good at what you do, you will always be sort after.

Onyenekenwa (2010), conducted a research on Gender Digital Divide: Comparative Assessment for Information Communication Technologies and Literacy Levels of Schools in Nigeria. The investigation was limited to boys and girls in senior secondary schools only, they were practically tested on word processing, ability to access the web for browsing and ability to manage web contents using laptops.

It was observed that 36.8% of the boy students and 8.8% of the girl students could process word accordingly, 48.8% of the boys and 27.2% of the girls could access the web for browsing only. while 52% of the boy students could manage the web content properly, only 17.6% of the girl students can manage the web contents to some extent.

It was concluded that both ratios for the digital performances were poor but much worse for the girls. The boys were better all round than the girls in the digital literacy parameters tested and thereby establishing the existence of digital gender divide in the society.

Therefore, the digital divide needs to be narrowed down, more awareness of digital skills need to be created among girls for them to show more interest. Despite efforts to redress the balance over the last 20 years, girls and women still face barriers in digital training, experience, careers and opportunities due to their gender [16] Not only does this digital gender gap exist, it has grown wider in recent years. The gap between men and women using the internet [has grown](#) from 11% to 11.6% between 2011 and 2017. Women are on average 10% [less likely to own a mobile phone](#) than men with the gap being widest in South Asia at an alarming 26% [16]

As the world is gradually going digital, girls and women in Nigeria are still behind in tech, to bridge this observed gap, Plan has highlighted 4 step guides towards creating empowered

girls who will thrive in a digital world [16].

a. Educate Girls Equally: The first step towards improving women's and girls' access to technology and digital spaces is to push digital technology education and actively support and promote girls' participation in related subjects. This will help ensure that they have equal access to opportunities in the workplaces of the future.

b. Close the Tech Access and Usage Gap: Girls might be reluctant to access computer classes and internet cafes because these spaces are dominated by men or they are located in places that are not accessible to women. This can be improved by creating classes and sessions specifically targeting girls in locations accessible to them and teaching digital literacy and ensuring they know how to get the most out of their devices.

c. Make Digital Environments Safe for Girls: Safety is a justifiable concern for girls and women in online spaces. The digital world reflects the diversity of the physical world, and girls experience many of the same forms of violence, harassment and abuse online as they do elsewhere. Ensuring girls are aware of the risks associated with using technology and being online and know what to do and who to contact if anything makes them feel uneasy is a crucial part of closing the digital gender gap.

d. Empower Girls and Women to Create Digital Technology: It is important to recognize the role of women and girls not just as users and consumers of technology, but as developers and creators, too. Much of the technology and digital content we use today has been designed and developed by men, hence empowering and mentoring girls to be developers and creators of apps and not users of technology only will go a long way in getting more girls and women to be more interested and ready to learn and join the digital race to be at par with their male counterpart

3 METHODOLOGY

Primary data was used in this work, a well structured questionnaire on the attitude of females towards digital skills acquisition was administered to girls and ladies between the ages of thirteen (13years) and forty (40years). Ten (10) selected schools were considered both Senior Secondary Schools and Higher Institutions within two (2) Local Government Areas (LGA) in Oyo State, Nigeria.

This study adopted survey research methods to examine the acquisition of digital skills and girls interest among female genders. The respondents were categorized into two, girls in Senior Secondary Schools (13 - 19 years) and ladies in Higher Institutions (20 - 40 years) in Oyo State. Two LGA; Ido LGA and Ibadan North LGA in Oyo state were considered for this study because of the geographical location of the authors.

Selections of schools in these LGAs were based on public/government schools only because it was observed that the public/government schools are far behind in terms of development and skills acquisition compared to private schools in the state. Selected for this study were two (2) higher institutions; Oyo State School of Nursing, Eleyele Ibadan and Oyo State School of Hygiene Eleyele, Ibadan, both in Ibadan North LGA. Eight (8) secondary schools were also selected, they include; Oba Abass Grammar School Eleyele Ibadan, Jericho High School Eleyele

Ibadan, Eleyele Secondary School, Eleyele Ibadan and Urban Day Grammar School, Jericho Ibadan located in Ibadan North LGA. While Community Grammar School Ido Ibadan, Community Grammar School Ologuneru Ibadan, Community Grammar School Apete Ibadan and United Secondary School Ijokodo Ibadan are located in Ido LGA in Oyo State.

The total population of each school was uncertain, a sample of fifty (50) respondents were chosen from each of the ten (10) schools using random sampling method among the female students making a total of five hundred (500) to make up sample size. A total of four hundred and sixty-one (461) that is 92.2% out of the 500 questionnaires distributed were duly filled and returned at the point of visit.

Simple random sampling was considered because it allows the sampling error to be calculated and reduces selection bias. More-

over, it is a reliable method of obtaining information where every single member of a population is chosen randomly, merely by chance. Although Takes longer to conduct since the research defines the selection parameters, it is still the most straightforward method of probability sampling.

4 RESULTS AND DISCUSSION

This section shows the analysis of the result generated during the sampling process. As stated previously, 461 questionnaires were returned from the sample size therefore, the results were based on the actual number of the returned questionnaires. Table 1 shows the type of digital skills that are acquired by girls and the result generated during sampling. While table 2 shows the reasons for the girls' desire to learn digital skills

Table 1: Types of Digital Skills that are Acquired by Girls

S/N	Responses	Girls (13 – 19 years)	Ladies (20 – 40 Years)
1	Social Media (Facebook, WhatsApp, Twitter, Instagram, Snap Chat, Mails etc.)	87.0%	94.2%
2	Digital Marketing (Mobile /Email Marketing)	2.2%	14.8%
3	Web Design / Development	5.0%	27.0%
4	Downloading files	7.7%	39.0%
5	Job Haunting	0%	72.8%
6	Interactive Games	82.6%	74.0%
7	Education and Research	0.9%	13.0%
8	Graphics Design	6.8%	13.8%
9	Shopping	3.0%	42.2%
10	Friendship and Dating	24.0%	56.8%

From table 1, the study shows that 87% of the girl respondents and 94.2% of the lady respondents make use of their devices for frivolities only. Its only social interactions and game playing that takes most of their time while making use of their digital device. 2.2% of the girls and 14.8% of the ladies use their devices for digital marketing which includes mobile and email marketing. The results further shows that the respondents show little interest in both Web Design/Development, 5.0% of girls and 27.0% of ladies and Downloading of Files,7.7% of girls and 39.0% of ladies while using their devices. It was also discovered that 72.8% of the ladies that responded believed they can get good jobs via job haunting on their device while the girls believed they were not ripe enough for job haunting yet.

It was further discovered that,42.2% of the ladies and 3.0% of the girls prefer to use their devices for online shopping while 56.8% of ladies and 24.0% of girls chooses to use their devices to find friends and dating partners. It was observed that the

girl respondents believed they are not in the best position to shop by themselves online probably because they don't have their personal account yet or they are not financially buoyant to carry out such transactions. The result from table 1 further explain that 82.6%, 0.9% and 6.8% of the girl respondent and 74.0%, 13.0% and 13.8% of the lady respondents mostly use their devices interactive games, education/research and graphic designing respectively.

It was also discovered from table 1 that the main digital skills that are of utmost importance and necessary in this modern age when all organizations and workplaces are going remotely and digital expertise becomes more vital are not of concern to young ladies and girls of nowadays. Digital use like Web Development, Research Work, Downloading of Files, Digital Marketing and Graphics Design are of very low percentage for both girls and ladies respondents. This shows that there is a digital gap between the girl child and the digital opportunities in this digital world.

Table 2: Table showing the Interest of Girls and Ladies with digital skills

S/N	Responses	Girls (13 – 19 years)	Ladies (20 – 40 Years)
S/N	Reason	Girls	Ladies

1	Do you Learn Digital Skills?	0%	14.2%
2	Does Digital Skills Interest You?	3%	11.4%
3	Why Do You Learn Digital Skills?		
A	Good Job	24%	92%
B	Organization are Digitally Evolving	2.2%	16.3%
C	Change in Career	0.8%	14.0%
D	Start / Grow Your Business	9.2%	74.4%
E	Side Hustle	12.0%	74.9%
F	Global Relevance	11.8%	28.7%
G	The World is going Digital	3.6%	16.5%

From table 2, the study revealed that girls within the ages of 13 and 18 (most of them still in Senior Secondary School) do not learn any digital skill both at home and in school because we have a 0% response for those that learn digital skills and a very low percentage of 14.2% of the ladies responded to be learning digital skills. This implies that the respondents have been faced with digital skills challenges and unawareness of available digital skills for future use. The study revealed that 3% of girls and 11.4% of ladies have little or no interest in digital skills.

Furthermore, the study shows that, 24% of girls and 92% of ladies want to learn digital skill so that they can get good jobs. 2.2% of girls and 16.3% of ladies wishes to learn digital skills because most organizations are digitally evolving, else they stand the risk of been kicked out of relevant opportunities in the industry.

The study further revealed that 0.8% of girls and 14.0% of ladies desire to learn digital skills to change or upgrade their career while 9.2% and 74.4% of girls and ladies respectively will prefer to learn digital skills to startup their own business. It was also revealed that 12.0% of girls and 74.9% of ladies want to learn digital skills for side hustle, that is, to make additional income. While 11.8% of girls and 28.7% of ladies see learning digital skills as been globally relevance, 3.6% of the girl respondents and 16.5% of the lady respondents wants to learn digital skills because the world itself is going digital.

It was also discovered in this study that, despite the fact that the world is going global, everyone especially the opposite sex (males) are seeking global relevance and advancement in knowledge, majority of the female respondents are not ready for or have interest in the digital skills that can change their way of life. From the research, it seems clear that girls and ladies are far behind in this digital world, without increased digital adoption and use, girls will have fewer employment opportunities and will face additional barriers to workforce participation in the nearest future.

5 CONCLUSION

The study concludes that many of the respondents use their digital devices for frivolities and things that might not be of utmost importance to them. The result shows that girls and women do not really show interest in digital skills acquisition.

The study further concludes that women and girls are far behind in the world of digital skills, they have greater opportunities to break the gender bias that is ravaging the country by rising up to the challenges ahead and taking responsibilities especially in the areas of web / app development, graphics designing, project management, and data analysis.

6 RECOMMENDATIONS

Since digital age is expanding into all areas of lives, it is therefore recommended that just as all regulatory bodies have decided to make entrepreneurship compulsory and to be taught at all higher institutions, digital skills should also be taught as a core course, and treated with same importance as entrepreneurship skills even at the grassroots level. Most importantly, the girls at secondary school level should also be well acquainted with the importance of digital skill acquisition.

Other recommendations includes, creating awareness for girls on digital technology education and actively supporting them in the participation of skills related to tech. Also, by empowering and mentoring girls to be developers and creators of apps and not users of technology only by teaching them digital literacy through the organizations of classes and workshops

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