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KEYBOARDING: AN ESSENTIAL 21ST-CENTURY DIGITAL SKILL FOR UNDERGRADUATES IN SOUTH EAST NIGERIAN FEDERAL POLYTECHNICS

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Abstract

The study accessed keyboarding as an indispensable 21st century digital skill necessary for all undergraduates in Federal Polytechnics in South-East, Nigeria in particular. Descriptive survey research design was adopted for the study. The population of the study comprised of 2,228 lecturers from three Federal Polytechnics in South-East. Nigeria. A sample size of 377 lecturers was drawn from the population using simple random sampling and Krejcie and Morgan table for sample size determination. A structured questionnaire titled "Keyboarding an Indispensable Course required by all Polytechnic Undergraduates (KICRPU) was used as instrument for data collection. Three experts validated the instrument while Cronbach alpha was used to obtain the reliability coefficient of 0.89. Two research questions and one hypothesis guided the study, 302 copies of the questionnaire were duly completed and used for the study. The items were rated on a four point rating scale; mean and standard deviation was used to analyze the research questions while t-test was used in testing the hypothesis. The findings revealed that keyboarding course is required by undergraduates to meet up with the demands of the digital age. The researcher recommended among others that the keyboarding course should be introduced in all disciplines in Polytechnics in Nigeria and as well, computer labs of various institutions should be adequately equipped to enable the teaching of this course.

Keywords*:* Keyboarding Skills, Undergraduate Education, Polytechnic Students & Digital Literacy**.**

Introduction

One of the core subjects in Office Technology and Management curricula taught in Polytechnics in Nigeria is the Keyboarding subject. Keyboarding is an activity used for typing in information or data into different kinds of machines that have a typewriter-like keyboard. There is this misconception that keyboarding skills is only required by only Office Technology and Management students to serve administrative purposes after graduation; however, this misconception can no longer hold in a world of massive advanced technologies where people of all professions use the computer to send e-mails, write and present reports of all kinds, do on-line

tasks, do architectural, laboratory and engineering designs/reports, takes on-line courses, researches and examinations as the case may be. Furthermore, the COVID-19 pandemic that engulfed the whole world last few years has furthermore provided the need for the inclusion of keyboarding in the Polytechnic curriculum. Almost everything is been done virtually nowadays - online conference, PowerPoint presentations, on-line web meetings, on-line businesses, on-line schooling (e-learning) on-line messaging etc; this has further provided the gap for keyboarding skills for all undergraduates.

Keyboarding skill is the ability to fluently communicate through a computer keyboard; it is the process through which information and data are keyed into the computer by the use of various keys of the keyboard (Willer 2013, Oma, 2020). In today's advanced technological world the ability to input and extract data or information through a keyboard is no longer restricted to secretarial staff; it is now a very valuable skill for all people at all levels for every profession. There is no doubt that Office Technology and Management Educators have a key role to play in developing the computer-literate human capital needed for today's labor market; therefore there is need to re-examine some traditional attitudes and priorities with regards to the value and relevance we place on computer keyboarding skills in our school system. This is because in today's technologically advanced society imputing and extracting text or data is a fundamental part of information technology and as such structured training in keyboarding skill is needed to facilitate the efficient use of technology without stress. Structured training is required because touch-typing is a complex psychomotor skill; systematic teaching of keyboarding skills to students will prevent them from picking up bad habits of typing such as "hunt and peck" that is, typing with two fingers from each hand.

Keyboarding is a skill that can be used throughout a lifetime and mastering this skill involves learning movement and physical position (technique), comfortable keyboard interaction (ergonomics), and key locations. Learning key location requires a sequential introduction and a great deal of repetition and reinforcement in order to develop the kinesthetic memory that leads to automatic keyboarding (Typing 2023; Donica, Giroux, Kim & Brandson, 2021). Therefore, there is no doubt that Business Educators have a key role to play in developing the computer-literate human capital needed for the labour market; therefore there is need to re-examine some traditional attitudes and priorities with regards to the value and relevance of computer keyboarding skills in the Polytechnic system.

As of today, the keyboard is the only effective means of human to computer or primary source used for keying in data or information into computer; this makes acquiring keyboarding skills very necessary for all undergraduates no matter the discipline. As different professions are becoming more computerized, the skill of keyboarding is also becoming very essential. The need to have above-average touch-typing skills is also becoming more urgent than ever before. Computers have started replacing books, while pen and paper have started given way to keyboard and screen. Touch-typing in keyboarding is the ability to use muscle memory, keying in words correctly without looking at the keyboard but the eyes are fixed on the screen or the source document; it is a psycho-motor skill which involves a high degree of hand, eye and brain co-ordination . Each finger is associated with a key on the keyboard and the person types correctly with all the fingers without looking at the keyboard.

On the other hand, another keyboarding method is called the hunt and peck; this is where a person visually uses one finger on one hand or one finger on the other hand to locate and

depress the keys, this method is primitive and has a lot of disadvantages. Despite the ready availability of mice, scanners and voice synthesizers, the unavoidable fact remains that text input through an alphabetic keyboard is still the most efficiently used method of document input into the computer (University of Alabama, 2022; Nnaji & Odusanya, 2019).

Undergraduates are students of tertiary institutions (Polytechnics in this case) who are still in school but have not yet graduated.

Polytechnics are post-secondary institutions that offer courses in the Arts, Sciences, Technology and Engineering. Polytechnic education in Nigeria is under the purview of the National Board for Technical Education (NBTE)

Benefits of Keyboarding Skills

Keyboarding was considered before now as simply an "office" skill, but its scope has recently expanded far beyond just an office skill needed only by secretaries. Presently keyboarding is regularly been used in schools for different purposes as well as in most modern careers. By helping students to master these skills, they are helped to be more effective, productive, and confident when they are faced with a task requiring keyboarding during their schooling and after graduation. There are many benefits to providing keyboarding lectures for students; not only does it support better learning, it also provides career opportunities in the future for them.

Most jobs in today's technology based work environment requires some degree of computer work, and having the ability to type quickly and efficiently makes an individual more marketable and sets the person at an edge than those who simply "finger pecks" at the keyboard. Learning to type efficiently and effectively is an investment in ones career future (SkilsYouNeed 2022).

Computer Based Tests (CBT) is another reason why keyboarding should be considered an essential skill for all undergraduates to learn at school. The faster a student can type, the more time they can devote to improving the quality of their response and answering the rest of the examination's questions. Therefore, consistent exposure to keyboarding tools and practice has a notable impact on students' performance and test scores in computer-based assessments.. (Cicerchia, 2021).

Furthermore, keyboarding skills reduces typing errors. Learning proper typing significantly reduces the number of errors one can make. Keyboarding skills makes one to focus on the content being typed rather than on the keyboard or on correcting mistakes. This is possible because touch typing relies on muscle memory, and after enough practice, ones fingers will know what keys to press without having to consciously think about it. In addition, keyboarding helps improve one's ability to communicate effectively while writing letters, emails, memos, or reports etc because using a keyboard will help the person avoid common grammar and spelling mistakes (Type to learn 2023).

According to Lcom Team (2021), another reason for teaching keyboarding to students is to provide them with needed technical skills; this is because keyboarding is a necessary skill for education and most careers. Keyboarding has become an integral part of social relationships; it helps to support email, social media, and other forms of communication. By teaching students keyboarding, educators are ensuring that their students can effectively and efficiently perform tasks that require keyboarding. More so, Lcom Team added that another obvious reason for keyboarding for students is to help them free up cognitive energy during typing-related tasks. As students are keyboarding in school assignments or later as part of their job function, typing without keyboarding skills can be a slow and arduous process, requiring them to find each letter on the keyboard one at a time. By helping students master keyboarding skills early, they are able to focus less energy on finding the keys during these tasks, freeing them up to concentrate more effectively on what they are trying to communicate. Furthermore, "Lcom Team" stated that there are some students who would not otherwise have the opportunity to master keyboarding skills outside of school that making keyboarding a part of the school curriculum helps to support digital equity, offering students, regardless of socioeconomic status, the ability to master keyboarding skill. This helps not only to provide more equal opportunities in the classroom, but also to open up more equal job opportunities in the future for all.

Typing helps to improve, develop and learn new skills through a computer or any other device that is keyboard based; this enables people to improve their employability and marketability opportunities (Typesy 2023). Typesy added that keyboarding skill helps protect ones health. This is because individuals who do not know how to sit properly and correctly place their fingers and wrists on the keyboard, risks getting wrist problems, neck and shoulder stiffness. Individuals who have mastered touch typing in keyboarding knows how to type with minimum wrist and finger fatigue and knows how to type with their neck and shoulders relaxed. Touch typing ergonomics safeguard people from carpal tunnel syndrome and other forms of wrist pain and damage.

Bock (2019) opined that students who are efficient in touch typing can use technology and social communication media to communicate efficiently with people across the globe without any disruption or added stress. More so, collaborating on projects or interdisciplinary projects with other students within a country or other nations of the world can be done with ease.

Touch screens is another input method into computers and other devices, but however, touch screens can only serve as a replacement for a mouse rather than for a keyboard. One of the disadvantages of typing on a touch screen is that it lacks the tactile response of a real keyboard and this can make the user place the hands in an awkward position which may cause strains on the wrists, neck and shoulders. Secondly, on-screen keyboards also wastes time, in order words it reduces the speed of the user (Scott, 2019).

Statement of Problem

Despite all the uses of the computer for everyday activity in this present digital age, most students cannot type accurately with proper techniques without looking down at the computer keyboard. Even though computers and keyboards are seen in most classrooms in Polytechnics in Nigeria, the actual touch-typing element is rarely taught as a skill; this is in contrast to other

Western countries such as Australia and the United States and some few African countries where keyboard skills are part of their curriculum.

Whether or not keyboarding education should be included within the Polytechnic curriculum for every discipline has remained a controversial topic. There is this view that keyboarding skills are required only by Office Technology and Management students to serve administrative purposes after graduation and therefore irrelevant for other students. Should this belief be upheld in a world of massive advanced technologies where people of all professions use the computer keyboards to write and present reports of all kinds, do architectural, laboratory, engineering designs/reports; used in banks, medical works, auto workshops, pharmacies, air line reservation counters, factories, homes to name a few? These questions are intended to be answered through this study.

Objectives of the Study

The main objective of the study is to ascertain the relevance of keyboarding as an indispensable skill required by all Polytechnics Undergraduates in South East, Nigeria and specifically to:

1. Determine the existing needs for inclusion of keyboarding subject as a course for all undergraduates in Polytechnics in South-East Nigeria.
2. Determine the skills to be acquired in learning keyboarding course for all undergraduates in Polytechnics in South-East Nigeria.

Research Questions

The following research questions guided the study:

1. What are the existing needs for inclusion of keyboarding subject as a course for all students in Polytechnic in South-East Nigeria?
2. What skills can be acquired by students in learning keyboarding course by all undergraduates in Polytechnics in South-East Nigeria?

Research Hypothesis

Male and female lecturers do not differ significantly in their views regarding keyboarding as an indispensible 21st century digital skill needed by all Polytechnic undergraduates.

Methodology

The study adopted descriptive survey research design. It was carried out in South East, Nigeria. The population of the study consisted of 2,228 lecturers in tertiary Federal Polytechnics in South East, Nigeria; Federal Polytechnic, Nekede has 718 lecturers, Federal Polytechnic, Oko, Anambra State has 613 lecturers and Akanu Ibian Federal Polytechnic, Unwana, Afikpo, Ebonyi State has 863 lecturers. A sample size of 377 lecturers was drawn from the population using simple random sampling and Krejcie and Morgan table for sample size determination. Self-developed questionnaire titled "Keyboarding an Indispensable Course Required by all Polytechnic Undergraduates (KICRPU)" The questionnaire consisted of two sections; A and B. Section A contained four items on demographic information of the respondents such as name of institution, department and gender, while Section B contained 25 items in respect to the two

research questions and structured on a four point rating scale of Strongly Agree (SA) = 4 Points; Agree (A) = 3 Points Disagree (D) = 2 Points; Strongly Disagree (SD) = 1 Point. Face and content validity of the instrument was determined using the opinions of two experts from Department of Office Technology and Management, and one expert from Measurement and Evaluation Unit. The reliability of the instrument was established using pilot-testing method and data collected were calculated with Cronbach Alpha which yielded coefficient values of .89. The researcher with the help of three research assistants adequately briefed, administered copies of the questionnaire to lecturers in their respective institutions. Out of 377 copies of questionnaire distributed, 327 (87%) of the copies were correctly filled and returned. Statistical mean and standard deviation were used to answer the research questions and determined the homogeneity of respondents' views while t-test was used to test the null hypotheses at 0.05 level of significance. Null hypothesis was rejected where the p - value is less than 0.05 level of significance; otherwise, the null hypothesis was accepted. The data analysis was carried out using statistical package for Social Sciences (SPSS) version 23.

Results

Research Question 1: What are the existing needs necessary for inclusion of keyboarding subject as a course required by all students?

Table 1: Respondents' Mean Ratings and Standard Deviation on the needs for inclusion of keyboarding course for all students.

S/N	Particulars	$\overline{X}$	SD	Remarks
1	Ability to key in complex documents using short cuts.	3.76	0.48	Significant
2.	Effective organization of mailable documents/information.	3.52	0.58	Sig.
3.	Personal use to produce confidential documents.	3.22	0.61	Sig.
4.	Ability to take electronic notes in class.	3.32	0.54	Sig.
5.	More career opportunity/being marketable.	3.12	0.63	Sig.
6.	Ability to do home assignments by oneself.	3.26	0.76	Sig.
7.	Ability to sit for digital standardized exams.	3.14	0.60	Sig.
8.	Helps students struggling with writing by hand to achieve full potential (dyspraxia and dysgraphia)	3.51	0.59	Sig.
9.	Supports Digital Equity	3.37	0.34	Sig.
10.	Assists students with visual impairment and special needs (autism spectrum disorder and Down syndrome)	3.21	0.53	Sig.
11.	Supports better learning for students.	3.26	0.76	Sig.
12.	Improves computer-based scores for students.	3.54	0.51	Sig.
13.	Essential for development of other skills.	2.97	0.72	Sig.
14.	Needed for job placement (many careers today require keyboarding/basic computer skill).	3.65	0.52	Sig.

Data in table 1 showed the mean responses of lecturers on the needs for inclusion of keyboarding course in the Polytechnic for all undergraduates. The table revealed that all the items listed were agreed to be needed by students for effectiveness in school and in the world of

work after graduation. They all have mean responses between 2.97 to 3.76 signifying that the responses were in agreement that keyboarding courses is needed for all undergraduates.

Research Question 2: What skills can be acquired by students in learning keyboarding by all Polytechnic undergraduates?

Table 2: Respondents' Mean Ratings and Standard Deviation on the skills to be acquired in learning keyboarding by all undergraduates of Polytechnics.

S/N		$\overline{X}$	SD	REMARKS
1.	Develop Speed and use time effectively.	3.63	0.72	Significant
2.	Type Accurately with fewer mistakes.	3.35	0.67	Sig.
3.	Ability to Touch-type without looking at the keyboard.	3.27	0.68	Sig.
4.	Being productive (type longer without getting tired)	3.24	0.76	Sig.
5.	Protects health issues (hand, wrists, neck pains)	3.09	0.71	Sig.
6.	Ability to communicate both in social and professional realms.	3.31	0.82	Sig.
7.	Ability to use word processing software effectively.	3.30	0.78	Sig.
8.	Ability to use database software effectively.	3.11	0.96	Sig.
9.	Become proficient in Microsoft excel	3.20	0.49	Sig.
10.	Proficient in e-mail and instant messaging communication.	3.49	0.63	Sig.
11.	Acquire Proofreading and Copyediting skills.	3.40	0.64	Sig.

Data in table 2 showed the mean responses of lecturers on the skills to be acquired by students in learning keyboarding course in Polytechnics. The table revealed that all the items listed were agreed to be skills that students will acquire if keyboarding was included in the curriculum for all undergraduates in the Polytechnics. They all have mean responses between 3.09 to 3.63. This signifies that the responses were in agreement that teaching and learning of keyboarding course guarantees skills necessary for the 21st century digital age.

Hypothesis

Male and female lecturers do not differ significantly in their views regarding keyboarding as an indispensible 21st century digital skill needed by all Polytechnic undergraduates.

Table 3: T-test analysis of the mean differences in the mean responses of male and female lecturers on their views regarding keyboarding as an indispensible 21st century digital skill needed for all Polytechnics undergraduates.

Respondents	N	Mean	SD	Df	T-cal	T-cri	Decision
Male	140	3.43	0.68	1.01	0.96	1.96	NS

Female 187 3.55 0.90

The result of table 3 showed that male lecturers had a mean of 3.43 and standard deviation of 0.68 while female lecturers had a mean of 3.55 and standard deviation of 0.90. The t-cal value of 0.96 with t-crit of 1.96 is greater than 0.05 at 0.05 level of significance. This means that the null hypothesis which stated that male and female lecturers do not differ significantly in their views regarding keyboarding as an indispensible 21st century digital skill needed for all Polytechnic undergraduates was retained.

Discussions

Findings from research question one showed that the respondents agreed that all the items listed as needs for inclusion of keyboarding course in the Polytechnic curriculum such as ability to key in complex documents using short cuts, effective organization of mailable documents/information, personal use to produce confidential documents, ability to take electronic notes in class, more career opportunity/being marketable, ability to do home assignments by oneself, ability to sit for digital standardized exams, helps students struggling with writing by hand to achieve full potential (dyspraxia and dysgraphia), supports Digital Equity, assists students with visual impairment and special needs (autism spectrum disorder and Down syndrome), supports better learning for students, improves computer-based scores for students, essential for development of other skills and needed for job placement (many careers today require keyboarding/basic computer skill) were all relevant and needed.

The above finding collaborates with the view of Blecharczyk (2022) that keyboarding improves the ability of students to communicate effectively with the computer; ability to conduct any type of research and analysis more effectively and enables students have speed and accuracy in data entry, writing reports among other benefits. More so, Typesy (2019) added that teaching keyboarding to students in this 21st century has become part of the common core standards in the western world where a typing requirement for each school grade level (primary school upwards) is demanded. Furthermore, that keyboarding helps students in their computer-based assessments and it is also an essential skill for most types of job. With keyboarding students are been set up for success in the high-tech future where most jobs will require the use of computer, coding and analyzing large amount of data. Putney (2020) described keyboarding skill as a necessary skill for today's students because it enables educators to connect to their student's online world to engage and motivate them in today's ever evolving world of technology.

Findings from research question two showed that the respondents agreed that all the listed items were important skill to be acquired by students when they learn keyboarding. Such skills include: develop peed and use time effectively, type accurately with fewer mistakes, ability to touch-type without looking at the keyboard, being Productive (type longer without getting tired), protects health issues (hand, wrists, neck pains), ability to communicate both in social and professional realms, ability to communicate both in social and professional realms, ability to use word processing software effectively, ability to use database software effectively, become proficient in Microsoft excel, proficient in e-mail and instant messaging communication and acquire proofreading and copyediting skills.

This finding is in line with the views of Baiden (2018) which stated that the computer system is meaningless without keyboarding skills which are very important and needed to key-in data, issue commands, play games and every other activity to be done with a computer. Baiden further emphasized that students who can touch-type learn faster other desktop applications than

students without the keyboarding skills. Baiden added that keyboarding skills increases student's confidence in software use and in learning other life-long skills. This has made it a basic requirement in today's digital age he concluded. Subsequently, Western Governors University (2018) agreed that using the computer without the proper techniques does not allow for the needed maximum typing speed and accuracy and that proper keyboarding technique prevents computer related injuries and strains for students and all users of computer.

The null hypothesis which stated that male and female lecturers do not differ significantly in their views regarding keyboarding as an indispensible 21st century digital skill needed for all Polytechnic undergraduates was retained. According to Aina and Igbinedion (2019), keyboarding skill is required for global practices, this is because technology has revolutionized the way students learn and interact with the world around them. As technology continues to evolve, the need for students to develop keyboarding proficiency increases too, therefore, keyboarding has become an essential skill for all students and at all levels of education.

Conclusion

The findings showed that without the necessary keyboard skills the full potentials of using a computer cannot be fully realized by students of all disciplines. This shows that keyboarding is a vital skill for all students in today's digital world. As the world becomes more digitized, the ability to type quickly and accurately becomes more important and indispensible. As shown by the findings of the study, keyboarding skills helps students in their academic responsibilities, personal developments and as well as ensure their future career prospects. Keyboarding skills also protects users' health by their learning how to touch type correctly and it also boosts their productivity. Technological development has put more pressure on computer users to develop skills such as keyboard skills in order to best utilize the computer technology. Higher education institutions should therefore require their students to have good keyboarding skills by incorporating it in their school curriculum.

Recommendations

The following recommendations are made based on the findings of the study:

1. The National Board for Technical Education (NBTE) should introduce keyboarding course in all disciplines in Polytechnics in Nigeria.
2. The government should adequately equip the computer labs of various schools to enable effective teaching of the keyboarding course.
3. The government should also provide constant electric power for smooth running of the keyboarding programme and also a standby generator should be made available by various institutions.

References

Aina, M. & Igbinedion, V.V. (2019). Timeliness of keyboarding instruction as perceived by business educators in Ondo and Ekiti states , Nigeria. *American Journal of Creative Education 2(3) 138-148. Doi:10.20448?815.23.123.148*

Baiden, B. (2018). Enriching keyboarding skills of students teachers. *The International Journal of Science and Technology. https://www.theijst.com*

Blecharczyk, I. (2022). The importance of keyboarding in business studies *https://www.studywatches.com2022/06/14>the-importance...*

Bock, R. (2019). Advantages of keyboarding class for students *https://www.peaklearn.com*

Budinich, B. (2019). Do keyboarding skills improve students test scores? *https://www.typing.com*

Cicerchia, M. (2021). Why is keyboarding important to learn *https://www.read&spell.com>why-is-keyboarding...*

Cicerchia, M. & Freeman, C. (2022). Why is keyboarding important? *https://www.read&spell.com>why-is-keybaording...*

"Classperfect" (2020). Introduction to keyboarding *https://www.classnotes.ng/lesson/*

Donica, D. (2020). Keyboarding skills: building a strong foundation *https://www.lwtears.com/blog*

Donica, D.K., Giroux, P., Kim, Y. & Branson, S. (2021). A comparison of two keyboarding instruction methods over 2 years for elementary students. *The Open Journal of Occupation Article 13 9(3). htpps://www.the scholarship.ecu.edu*

Indeed Editorial Team (2023). Keyboarding skills: definition and how to improve them *https://www.ca.indeed.com>...<career* development

Kenpro, I. (2012). Sample size determination using Krejcie & Morgan table. https://www.kenpro.org

Lcom Team (2021). The importance of keyboarding for students *https://www.learning.com>blog>the-importance-of.....*

Nnaji, F.O. & Odusanya, T.A. (2019). Problems encountered by students during teaching and learning of keyboarding skills in tertiary institutions in Taraba state. *Bakundi Journal of Technology, Agriculture and Entrepreneurship 1(1) 1-11.*

Oma, C. (2020). Introduction to keyboarding. *https://www.tansicollege.edu.ng>content>*

Parson, A. (2019). What are the advantages of using a computer keyboard *https://www.techwalla.com*

Putney, M. (2020). Why is typing important for 21st century learners *https://www.wtears.com>blog:*

SkillsYouNeed (2022). Benefits of learning how to type fast and accurately *https://www.SkillsYouNeed.com>benefits-of-typing...*

Studywatches (2022). The importance of keyboarding in business studies *https://www.stydtwatches.com.>2022/06/14>the importance…..*

The University of Alabama (2022). Business keyboarding skills. *https://www.alabama.edu UAB Collat School of Business, Birmingham AL 35233*

Type to Learn (2023). Why teach keyboarding: the benefits of learning to touch type *https://www.typetolearn.app>news&articles*

Typesy (2023). The benefits of keyboarding; the key to your future *https://www.typesy.com>the-benefits-of-keyboarding*

Typing (2023). Why do elementary students need to learn computer keyboarding *https://www.britanywashbum.com>2023/05>why...*

Western Governors University (2018). Keyboarding education for the college student *https://www.wgu.edu>blog>keyboarding-education*

Willer, A. (2013). Keyboarding what it really is and why it still has to be taught *https://www.bytesoflearning.com*