EFFECTS OF PRIOR-KNOWLEDGE OF TYPEWRITING ON STUDENTS' PERFORMANCE IN WORD PROCESSING IN COLLEGES OF EDUCATION, NIGERIA

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Abstract

This study was conducted to determine the effects of prior-knowledge in typewriting on students' performance in word processing in colleges of Education in Nigeria. Two research questions were answered and two null hypotheses were tested. This study adopted a quasi- experimental design and the population was 91 NCE I students 2019/2020 of FCE Katsina. Convenience sampling procedure was used in this study. The entire population of 91NCE I business education students was used for the study. This is because the size of the population was not large and meaningful. The instrument used for the collection of data was word processing achievement test (WPAT) developed by the researcher. The instrument was face-validated by three experts from Faculty of Education, Department of Business education, Ahmadu Bello University Zaria. To ensure reliability of the instrument, a trial testing was carried out using 10 respondents comprising Business Education students of Waziri Umaru Federal Polytechnic, Birnin Kebbi. The data collected from the trial testing were subjected to statistical analysis. The resulting statistical result gave reliability co-efficient of 0.86. The research questions were answered using mean and standard deviation, while t-test was used to test the stated null hypotheses. The finding on research objective one indicated a mean difference of 11.5 between students with credit and above in Prior-knowledge of typewriting in favor of NCE 1 student who had distinction in prior-knowledge in typewriting performed better in word processing on the basis on the finding. The research concluded that distinction and pass in prior-knowledge typewriting increased students' performance in word processing. The research also made some recommendations which include the need for parents to buy computers for their children in order to develop their experience in word processing. In addition, OTM sections in COEs should ensure pre-training in typewriting for prospective candidates who seek admission into their department.

Keywords: Prior-Knowledge,   Typewriting,   Word   Processing   performance

Introduction

The development of technology as it relates to typewriting in the last two decades could aptly be described as a revolution which is still on and no one seem to know how far this revolution may go. As a results, the traditional concept of the office has been giving way to the office made up of rings of cables with interfaces and plugs in which a wide variety of equipment may be linked. In spite of these technological developments, typewriting still remains one of the most important subjects in office technology and management programme, and it has raised much concern among office technology management scholars. The typewriting which is either a mechanical or electromechanical devices is a machine that is used in acquiring typewriting skills. The typewriting is either a mechanical or electromechanical device with a set of 'keys' that, when pressed causes

characters to be printed on a paper". Typewriting is a skill essential to the development of any economy (Ezenekwe, 2010).

On the other hand, Mbaezue (2010) views typewriting skills as "the mastery and proficiency of one using the typewriting to produce document that are mail-able. These includes, reading, writing, listening, computational, operational and interpersonal". Adebisi (2011) defined typewriting as "an art of producing prints like character on paper by pressing keys on the machine called typewriting, to meet the need to communicate in the most appropriate manner by writing". From the ongoing, typewriting can be seen as 'an art' which must be learn. It is also a process of getting information on paper through operating the typewriting keyboard, by the use of mechanical or electro- mechanical contrivance which makes letters by means of types.

In teaching and learning word processing, proper teaching and learning of keyboarding cannot be overlooked because having background of keyboarding with constant practice may enhance the student's performance in word processing. Keyboarding is the gateway to all computer operations. Keyboarding helps to get all inputs into the computer. Kimberly (2010) defined keyboarding as the manipulation of the computer keyboard by touch. Aliyu (2010) explained keyboarding as the art of placing information into various types of equipment through the use of a typewriter-like keyboard. Keyboarding is a psychomotor skill that involves mental processes as well as coordinated muscular movement. Keyboarding requires stimuli to sensory receptors (eyes, ears, fingertips, muscles, tendons and joints) which are screened, transformed and organized by a neural process known as "selective perception" into modified mental images of the original stimuli.

However, Keyboarding as a skill, is typically discussed in terms of working on a computer. With the introduction of the personal computer (PC) in educational settings, interest in the area of keyboarding skills in office technology and management programme increased significantly. Whoever aspires to become a manager or teacher in the field of office technology and management needs a thorough understanding of the knowledge of keyboarding.

In view of this, a lot of arguments have been put forward regarding the difficulty of word processing as a course. Solomon (2014) opined that the issue as to whether or not word processing is difficult depends on the person in question, his disposition towards the course and his prior knowledge of the course. Solomon (2014) further argued that while word processing can be extremely difficult for some students, it is relatively easier and stress free for others. This means differences in performance in word processing by students could be as a result of a number of factors such as performance in O'level typewriting and gender.

Performance is the act of accomplishing a task successfully. Brady, Showers and Fullan (2012) stated that performance connote final accomplishment of something noteworthy after much effort. Enyi (2014) stated that performance refers to the degree of success reached or attained in some general or specific area of study. Also, it is the extent of success reached or attained in some general or specific area of study. It is the extent of success attained by a student on a task he is exposed to. Performance in this study refers to students' attainment in school courses or subjects. It includes students' excellence in academic pursuit, behavior, confidence, communication skill, punctuality, assertiveness,

social skill and the likes. Students' performance is commonly measured by their success in classroom assignment, exercise, continuous assessment test or examination.

In his view, Erich (2010) stated that gender is the capabilities and attributes assigned to persons on the basis of their alleged sexual characteristics. It comprises of all those social and cultural distinctions that differentiate men from women. Lee (2012) defined gender as ascribed attributes that differentiate feminine from masculine. The gender of a person could influence his behavior, learning, interest, likes and dislikes. In the same vein, the gender of a student can affect his level of learning and achievement in keyboarding. There has been a general view supported by research that male students perform better than their female conterparts in practical oriented courses. For instance, Anigbogu (2012) pointed out that some cultures see males to be more superior to females and that such feeling is manifested in every aspect of their lives socially, academically etc. Attesting to this, Kurumeh (2015) observed that boys perform better than girls in keyboarding and sciences while girls excel in languages. In view of this, gender sensitivity to instructional technique is key issue in teaching keyboarding.

According to Nieman (2016) most teachers have been well trained in child development while only few have adequate training in psychomotor skill development. In order to be trained efficiently, students must be guided progressively through a series of movement of eye, arm, hand and finger sequences. This will help students to develop the movement or motion patterns that are expected for effective and efficient keyboarding. It is on this note that the researcher considered it necessary to examine the interaction effect of typewriting background and gender on Kaduna polytechnic students' academic performance in word processing as it enhances the speed and accuracy of the students in typewriting.

Sani (2020) carried out a study on Effects of prior knowledge in mathematics and students' performance in Book-Keeping in Ahmadu Bello Academy Farfaru, Sokoto. Two research questions were raised and hypotheses were formulated. The population was 180 students. The entire population was used as sample using convenience sampling procedure. because the population was not large and as such manageable. Quasi experimental design was used to conduct the study and Adapted-questionnaire was use to collect data from the students. The data was analysed using mean score and ANCOVA. The study however revealed prior knowledge in mathematics enhanced students' performance in Book-Keeping. Both studies shared in common the number of research questions, hypotheses and sampling procedure. However the studies differ in the level of education the study was conducted. While this study was conducted at Post Junior Secondary School level, the current study was conducted at the tertiary institution.

Yusuf (2018) conducted a study on prior knowledge and academic performance in first year accounting course.. The paper examines the impact of prior knowledge from the conceptual and metacognitive dimensions on academic performance in the first year accounting course. Four research questions and four hypotheses to guide the study. A population of 408 students of the Federal University Dutsinma, Nigeria in the 2012/2013 to 2015/2016 academic sessions were adopted for the study and sample of same was considered. The study used Ordinal regression adopting the ordered logit procedure in STATA was carried out. Prior knowledge was found to have significant impact on the performance in the first year accounting course. Findings showed that the joint impact of conceptual and metacognitive knowledge outweighs that of either conceptual or

metacognitive. The study therefore recommend among others that a composite scoring system incorporating conceptual and metacognitive knowledge variables be designed and used for admission placement in BSc in Accounting, BSc in Management and BSc in Economics. The study relates to the current study in the variable investigated which is prior knowledge, business courses and the use of the whole population as sample. The two studies however differ in the instrument for data analysis and while this study used first year first year accounting students, the current study use first year NCE in word processing.

Mbah (2015) conducted a study on the Effects of Prior knowledge of topics and instructional objectives on students' achievement in literature-in-English. The study, two research questions were raised and two hypotheses were formulated. Quasi experimental design was used for the conduct research, a total of 6053 students in senior secondary II from Abakalik Education zone of Ebonyi state was the population and sample of the study was 120 SSII was used to conduct the research. The instrument used for the study was a researcher-designed objective test titled Literature-In-English achievement test (LAT). The data was analysed using mean score and ANCOVA. The study concluded revealed that the use of prior knowledge of instructional objectives amongst students enhanced their achievement in Literature-In-English. This study shared some similarities with present study because it the effects of prior knowledge on current tasks, both study have two research questions and two hypotheses and Quasi experimental research designed was used for the study.

The current study, which is the effects of prior-knowledge of typewriting on students' performance in word processing in colleges of education, Nigeria. intends to cover the gaps observed in the previous studies.

Computers have become an integral part of people's life all over the world. The primary means for interacting with the computer is the keyboard. Keyboarding skills are no longer vocational in nature but necessary to be able to design, communicate, extract and disseminate information. Manipulative/typing technique underlies and becomes the essential basis for the development of keyboarding speed and accuracy. Experience has shown that the achievement level among office technology students in word processing is generally low. This is evident in students' inability to manipulate computer in an orderly manner through the use of keyboarding.

Word processing is a psychomotor skill that requires proper teaching and guidance by a qualified instructor who is knowledgeable and can use appropriate methods. Despite having competent lecturer in teaching and learning ICTs, according to Onu (2012), students' performance in word processing is alarming. Appropriate instructional methods are likely to enhance learning achievement in word processing, but if students also lack background of keyboarding/typewriting there is tendency for them to perform below average.

The results of students' performance in word processing examinations in polytechnic indicated that students' performances are declining steadily. This is supported by the students results for the last four years in word processing for instance NCE 1 performance was 55% in 2015/2016 session, 48% 2016/2017 session, 46% 2017/2018 session and dropped to 40% in the 2018/2019 session. It is evident; therefore, from the summary of the results that majority of the students perform poorly in word processing which may

have been caused by many factors but the major factors that this research wants to establish are those related to lack of prior-knowledge in typewriting performance.

Objectives of the Study

The specific objectives are to:

i.   determine the difference between the performance of NCE I student with prior-knowledge in typewriting and those without in word processing
ii.   determine the difference between the performance of NCE I students who have distinctions in their O'level result in typewriting and those with credit in word processing

Research Questions

In line with the specific objectives, the following research questions were raised by the researcher.

i.   What is the difference between the performance of NCE I student with prior-knowledge in typewriting and those without in word processing?
ii.   What is the difference between the performance of NCE I students who have distinctions in their O'level result in typewriting and those with credit in word processing?

Research Hypotheses

In line with the research questions the following null hypotheses in the course of study ware tested at 0.05 level of significance.

HO_1:   There is no significant difference between the performance of NCE I student with prior-knowledge in typewriting and those without in word processing
HO_2:   There is no significant difference between the performance of NCE I students who have distinctions in their O'level result in typewriting and those with credit in word processing

Methodology

The research design used for this study is quasi-experimental (Osuala, 2009). The researcher used intact classes for the study. The study design comprised of experimental and control groups using post-test approach. The experimental group was exposed to practical instructions on typewriting for a period of five weeks and two weeks for word processing making a total of seven weeks. This study employs the quasi-experiment method to establish the performances of admitted students into NCE I with O'level typewriting at their Senior Secondary School Certificate Examination (SSCE). The word processing was taught to the students and examination was conducted with a view to ascertain if typing background student performances in word processing ability. The population for the study comprised of NCE I Business Education (OTM) students of FCE Katsina for the year 2018/2019 academic session. The department was chosen because of the nature of the study and its proximity to the researcher.

Based on the ground that all the NCE I OTM students constituted the intact classes for the study, all 91 students served as sample for the study. Hence, there was no sampling procedure. This was in line with view of Nwakena (2009), who indicated that in a situation where by the population is small, the whole population should be used as a sample of the study. Word Processing Achievement Test (WPAT) developed by the researcher. The instrument was face-validated by three experts from Faculty of Education, Department of Business education, Ahmadu Bello University Zaria. To ensure reliability of the instrument, a trial testing was carried out using 10 respondents comprising Business Education students of Waziri Umaru Federal Polytechnic, Birnin Kebbi. The data collected were subjected to statistical analysis using Pearson Product Moment Correlation Coefficient (PPMC). The resulting statistical result gave reliability co-efficient of 0.86. Tracy 2006 testified that, for a scale to e considered reliable, it should have an alpha level of 0.50 to 1. Word Processing Achievement Test (WPAT) was used to collect data for the study and it was designed to test 'students' ability and skills in selected topics in word processing. The items of the instrument were developed by the researcher based on the topics taught to the students as stipulated in the National Commission for colleges of Education (NCCE) curriculum. There are 5 tasks in the WPAT which are made up of one task each from the topics selected for the experiment.

The instrument was scored on a minimum of 0 and a maximum of 100 marks. The researcher chooses to use the typewriting and word processing because typewriting machine that is used in typing documents, has undergone a series of modification and technological changes, which started from the manual typewriter to the electric typewriter and electronic typewriter and subsequently into word processing computer.

In analyzing the data collected, descriptive statistics such as frequency distribution and mean and standard deviation were used to answer all the research questions. Inferential statistics of t-test was used to test the null hypotheses at 0.05 level of significance.

Results

Research Questions One: What is the difference between the performance of NCE I student with prior-knowledge in typewriting and those without in word processing?

Table 1:   Analysis of mean scores of NCE 1 students with typewriting and those without it in word processing

Variable	N	Mean	Std Dev	MD
Students with typewriting.	33	70.20	10.436	33.6
Students without typewriting	58	36.6	16.772	

The study analysis presented in Table 1 show that NCE 1 students who had typewriting had a mean performance score of 70.20 in word processing and these without typewriting had mean of 36.6. This implies that O'level typewriting has potentials to increase students' performance in word processing. The result indicated a mean difference of 33.6 between the two groups in favor of NCE I students who had O' level typewriting

background. This is to say that students with` O' level typewriting performed better in word processing then those without it.

Research Questions Two: What is the difference between the performance of NCE I students who have distinctions in their O'level result in typewriting and those with credit in word processing?

Table 2: **Analysis of mean score of NCE 1 student with distinction in typewriting and those with credit in word processing**

Variable	N	Mean	Std Dev	MD
Credit	41	56.3	14.103	
				11.5
Distinction	50	67.8	15.847	

Table 2 above indicates the performance of NCE I students in word processing that have credit and above in O level typewriting. The analysis showed that NCE I students who had credit in typewriting scored a mean of 56.3 in word processing. While, NCE I students with distinction in O level typewriting had a performance mean score in word processing of 67.8. Similarly, the result indicates a mean difference of 11.5 between the two groups in favors of NCE I students who had distinction in typewriting. This is to say that students with distinction in O level typewriting performed better in word processing then those with credit.

Research Hypothesis One: There is no significant difference between the performance of NCE I student with prior-knowledge in typewriting and those without in word processing.

Table 3: **t-test analysis showing difference between NCE I students' performance with typewriting and those without in word processing**

ND Students with Typewriting	N	Mean	Std Dev	t-cal	Sign.
Students with Typewriting	33	70.2	16.772	4.76	0.000
Students without Typewriting	58	36.6	10.436		

Table 3 presents an independent sample t-test analysis used to compare the mean difference between the performance of NCE 1 students in word processing with typewriting and without typewriting. The analysis revealed that the mean performance score of NCE Istudents with typewriting was (70.2) and standard deviation (16.772) as against the mean performance score of ND I students without typewriting background 36.6 and standard deviation (10.436) with degree of freedom of 90 respectively. The t-value for the model was calculated at (4.76) with α p-value at (0.000). The t-cal was greater than the t-tabulated of 0.196 and the (0.000) α value was lower than the *a priori* significant p-value of (0.05). The result, therefore, shows that significant difference existed between the mean performance of NCE 1students with typewriting background and those without typewriting background, implying that there is significant difference in students' academic performance in word processing between the two groups. Hence, the null hypothesis was rejected.

Research Hypothesis Two: There is no significant difference between the performance of NCE I students who have distinctions in their O'level result in typewriting and those with credit in word processing

Table 4: **t-test analysis showing difference between NCE I students' performance with distinction and those with credit, in word processing**

ND Students with typewriting	N	Mean	Std Dev	t-cal	Sign.
Credit	41	56.3	14.103	3.893	0.001
Distinction	50	67.8	15.847		

Table 4 presents an independent sample t-test analysis used to compare the mean difference between the performance of NCE I students in word processing. The analysis revealed that the mean performance score of NCE I students with credit in O level typewriting was (56.3) and standard deviation (14.103) as against the mean of performance score of students with distinction in O level typewriting (67.8) and standard deviation (15.847) with degree of freedom of 90 respectively. The t-value for the model was calculated at (3.893) with α p-value at (0.001). The t-cal was greater than the t-tabulated of 0.196 and the (0.001) α value was lower than the *a priori* significant p-value of (0.05). The result, therefore, shows that significant difference exists between the mean performances of NCE I students with credit and above in O level typewriting, implying that there is significant difference in students' academic performance in word processing between the two groups. Hence, the null hypothesis was rejected.

Summary of the findings

Analysis of Research Question One have shown that NCE 1 students who had O'level typewriting had a mean performance score of 70.20 in word processing and these without typewriting had mean of 36.6. This implies that O'level typewriting has potentials to increase students' performance in word processing. The result indicated a mean difference of 33.6 between the two groups in favor of NCE I students who had O' level typewriting background. This is to say that students with` O' level typewriting performed better in word processing then those without it.

The analysis of Research Question Two, have shown that NCE I students who had credit in typewriting scored a mean of 56.3 in word processing. While, NCE I students with distinction in O level typewriting had a performance mean score in word processing of 67.8. Similarly, the result indicates a mean difference of 11.5 between the two groups in favors of NCE I students who had distinction in typewriting. This is to say that students with distinction in O level typewriting performed better in word processing then those with credit.

The result of Null Hypotheses One, have shown that significant difference existed between the mean performance of NCE 1students with typewriting background and those without typewriting background, implying that there is significant difference in students' academic performance in word processing between the two groups. Hence, the null hypothesis was rejected.

The result Null Hypotheses Two, have shown that significant difference exists between the mean performances of NCE I students with credit and above in O level typewriting, implying that there is significant difference in students' academic performance in word processing between the two groups. Hence, the null hypothesis was rejected.

Discussion of the Findings

This study on research question one and hypothesis one further shows that NCE I students without background in typewriting had a mean performance score of 36.6 in word processing. Again, the mean performance score of NCE I students with typewriting background was (70.20) and standard deviation of (16.772) against the mean of performance scores of NCE I students with no typewriting background (36.6) and standard deviation (10.436) respectively. The t-value for the model was calculated at (4.76) with α p-value at (0.000). This implies that typewriting background has potentials to increase students' performance in word processing. Nwaokolo (2014) reported that background in typewriting training starts from the keyboard. Therefore the keyboard operation is an indispensable activity in typewriting. Nwaokolo (year) expresses his view that "regardless of sophistication in information processing systems, keyboarding is indispensable." This view is also lauded by Ekpenyong and Inegbedion (2009) that, keyboard is a major part common to all (machines) and it plays the role of input device in all and facilitate students' learning outcome.

The findings of the study on research question and hypothesis two revealed that students with distinction background in O level typewriting performed better in word processing than those with credit. The t-cal (3.893) was greater than the t-tabulated of 0.196 and the (0.001) α value was lower than the *a priori* significant p-value of (0.05). The result, therefore, shows that significant difference existed between the mean performance of NCE I students with credit and above O level typewriting. Obioma and Uteh (2009) summit that, a student can be considered to be skilled in typewriting when performance is accomplished in less time, with less energy, greater accuracy, higher consistency, and with more flexibility and easy transfer such skills in the application of the knowledge in other business subjects.

Conclusion

It can be concluded from the major findings of this study, that background and performance in O'level typewriting as well as gender have effects on students performance in word processing in COEs, Nigeria. Therefore, knowledge of typewriting has become a must and a necessary skill for academic excellence and probably a way of life today. This is not only in schools or in the workforce, but also as a means for communicating with others, for sharing ideas, expressing thoughts, and even for utilizing entertainment through multiple technology devices such as computer, tables, gaming consoles, smart television, and even larger cell phones. Evidently, typing is the primary means of interfacing with a computer for undertaking word processing.

Recommendations

1. It is recommended that parents should buy computers for their children in order to develop their experience in typewriting and increase their skills not only in word processing but in other business subjects that might require such skills.
2. There is need for OTM Departments to ensure pre-training in typewriting of prospective candidates who seek admission into their Departments to increase the level of students' performance in word processing.

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