

ASSESSMENT OF TEACHERS' CONTENT KNOWLEDGE IN TEACHING KEYBOARDING IN
POLYTECHNICS IN NORTH EAST, NIGERIA

BY

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Abstract

Teachers are the most important factor in students' learning, yet little is known about the specialized knowledge held by experienced teachers in recent years. Conceptualizing teachers' content knowledge is a complex issue that involves understanding key underlying phenomena such as the process of teaching and learning the concept of knowledge as well as the way teachers knowledge is put into action in the classroom hence this study tagged Assessment of Teachers' Content Knowledge on the Teaching of Keyboarding in Polytechnics in North East, Nigeria. The study adopted a survey design. two research questions and a null hypothesis guided this study. The population of the study was 22 lecturers and 600 students' scores in keyboarding for three academic sessions from 2017/2018, 2018/2019, and 2019/2020, from Ramat Polytechnic, Maiduguri, Borno State and Federal Polytechnic, Bala, Taraba State. The population comprised of 10 lecturers, 50 ND 1 and ND 2 students' scores each in OTM programme, Ramat Polytechnic and 12 lecturers, 50 ND 1 and ND 2 students' each in OTM programme from Federal Polytechnic, Bala. The population also served as sample because of its manageable size. The 50 students' scores each of ND 1 and ND 2 from both institutions were randomly chosen. The instrument for data collection was a closed-end questionnaire. The drafted 29 items was given to three experts for content and face validity. The reliability of the instrument was determined using Cronbach Alpha with a coefficient value of 0.86. The data collected were analyzed using Mean and Standard Deviation. T-test was used to test the only null hypothesis at 0.05 level of significant. The findings amongst others recommended that teachers' content knowledge had positive influenced on the effective teaching and learning of keyboarding.

Keywords: Teachers, Content knowledge, Teaching of Keyboarding

Introduction

Education remains the most viable tool for the transformation of human behaviors and development of the society. It is also the vehicle for engineering the behaviors, attitudes and skills of individuals towards empowering them to positively contribute not only to their personal growth but also to the development of the society (Akusola, 2017). Business education is a phase of education which is aimed at developing business competencies in individuals of the tertiary level of education that will enable them to be gainfully employed and fit into the world of work as professionals. Based on this, Danko, (2016) enumerated some major goals of business education among which is to enable students to acquire skills and competencies required for the performance of basic business jobs that is, take simple administrative decisions and deal with correspondence, apply the various business concepts acquire in class to real life situations play a productive role in a free enterprise economy. As with all new era many changes are taking place. Some are occurring so rapidly that it sometimes seems impossible to keep up with them all. According to Nalabitt in Magtrends (2016), says that we are living in the age of the parentheses –that is one foot in the past and one foot in the future. What is the main factor causing this change? – Computers. Many of the skills required of our curriculum grammar, listening, speaking following instructions, reading, writing and communicating have become increasing important for this new age of information.

Preparing students for the 21st century cannot be accomplished without a strong and sustain emphasis on typewriting/keyboarding. Keyboarding is one of the core courses offered or taught in Office Technology and Management (OTM) and business education programmes in tertiary institutions since the introduction of National Policy on Education in 1981. It is subject which equips students with psychomotor skills that enable them engage in a life of work in the office as well as for self reliance (Ministry of education, 2012). Keyboarding is one of the most important skills that a student can learn. From personal to professional development, students will always need to know how to type especially for the techniques centric careers of the future. Schools have worked hard to integrate computers into the classroom and many do a great job teaching students how they can use the computer to obtain and produce information, they have paid little attention to teaching the art or science of using the keyboard quickly, accurately and with the correct fingers and techniques. Keyboarding is the base of an effective and proficiency in

computer operation. Keyboarding is a skill essential to the development of any economy. It is through skills that products in the form of goods and services are produced to the requirement of customers with the skills an individual will be employed, able and participates the production of goods and services (Ezenekwe, 2017). According to Nwosu, (2017), keyboarding provides its recipients with the following basic skills and competencies:

- a) Typing straight copy and statistical data from original source using machine control properly not only accurately but speedily
- b) Formatting the text and displaying it in an accurate acceptable form according to general office standard produce
- c) Editing, centering and tabulation capabilities using present format
- d) Neatly correcting errors using various means
- e) Proofreading of typed work on the machine in order to produce malleable documents
- f) Skill of hand-on machine/correct finger placement

Keyboarding is not an easy subject to teach, and it cannot be taught by just anyone. It is a cumulative skill. What can be learned or perfected at one level is heavily dependent upon what has been learned or refined at a prior level. The first exposure of keyboarding must provide the foundation for learning the proper techniques for the touch method of keyboarding. The best teaching can be accomplished by combining the business educators' knowledge of psychomotor skill development with the elementary teachers' knowledge of the learning pattern of this age student. Keyboarding is not a term that replaces typewriting but rather, it is the introduction of alphanumeric keyboard. Keyboarding is often the means for effective, communication. Business tells us that keyboarding will be a required skill for everyone. Keyboarding must be a requirement of every students offering OTM programme (Gregg, 2016).

Keyboarding skill is taught both in theory and practical. The theory affords the keyboarding students the opportunity to know various means, pedagogy, rules and technicalities involved in the process of typing, while the practical aspect involves the display or typing of those things learnt in the theory. A good understanding of the theory and pedagogy enable students to type well. Mbaezu, (2016), viewed keyboarding as the process of getting information on paper through operating the typewriter/computer/laptop/palmtop etc keyboard to produce malleable documents. Production of malleable documents can only be achieved through the possession of proofreading and editing skills, which is one of the most valuable skills in keyboarding.

Proofreading and Editing skill is the process of reviewing the final draft of a text to ensure that all information is accurately typed and all surface errors have been corrected. It involves the correction of grammatical spellings and typographical errors in a document hence, proofreading and editing skills are crucial, essentially to OTM students in this age of technology advancement. Teaching is highly complex activity that draws on many kinds of knowledge. Teaching is content intensive work that requires teachers to solve a multitude of content problem as they engage in the day-to-day and moment –to-moment work of teaching a subject matter. Teaching is a complex cognitive skill occurring in an ill-structured, dynamic environment. Expertise in teaching is dependent on flexible access to highly organized systems of knowledge. According to Punya and KoEhher (2020), stated clearly many knowledge systems that are fundamental to teaching which include: knowledge of students, knowledge of thinking and leaning and knowledge of subject matter. Historically, knowledge base of teachers' education has focused on the content knowledge of the teacher. More recently, teachers' education have shifted its focus primarily to pedagogy, emphasizing general pedagogical classroom practices independent of subject matter and often at the expense of content knowledge. The three major languages suitably use in teaching and communicating ideas of business education courses such as keyboarding, shorthand etc include: Theory/Verbal, Geometric/Graphical and Algebraic/Mathematical language. The importance and technicality of keyboarding as a core course offer in OTM programme in polytechnics in Nigeria makes it necessary that only competent, well trained and knowledgeable teachers should be used to teach the course at any level of education. This fact is supported by Macaulay, (2016) who asserts that visual aids makes lesson come alive and help students to retain learning better.

It was gathered by the researcher from some OTM students that the practical/algebraic aspect of keyboarding are mostly skipped, that they are not taught by their teachers either due to lack of power supply or not skilled in that aspect. Poor academic achievement in keyboarding could be attributed to many factors among which teachers' content knowledge itself was considered as an important factor. This implies that the mastery of keyboarding concepts might not be fully achieved without pedagogical knowledge and efficient use of resources persons (teachers). This means the resource persons (teachers) lack the appropriate texts to meet the varying needs of developing readers and analyzing students work and errors. For instance, a qualified science teacher no matter how

well trained, he/she is would unable to put his ideas into practice if the school setting lacks the equipment and materials necessary for him to translate his competence into reality. It is this identified gaps that have compelled the researcher to find out the content knowledge base of the teachers of keyboarding in polytechnics and its effects on the teaching of the subject matter.

Statement of the Problem

Keyboarding is a popular business course for many students whose major objectives are to develop touch of the keyboard and proper typing techniques. Keyboarding also involves building basic speed and accuracy, skill of hand-on machine and provides practice in applying these skills to the formatting of correspondence and other kinds of personal and business communication. The poor academic performance of students in this course seems to be attributed to many factors including lack of proofreading and editing of work on the machine, theoretical nature in the course is being taught, lack of accuracy consciousness, improper content mastering skills, lack of adequate time apportioned for practical, teachers lack pedagogical knowledge and fewer time apportioned for examinations purposes. It is on the basis of these identified gaps that the researcher is interested in investigating the actual situation as it is concerning teachers' content knowledge and its effect on the teaching of keyboarding in OTM programmes in polytechnics in the North East, Nigeria.

Purpose of the Study

The major objective of this study is Assessment of Teachers' Content Knowledge and its effect on the Teaching of Keyboarding in Polytechnics in North East. Specifically, the study sought to:

- 1) Investigate the level to which teachers' content knowledge affect the teaching of keyboarding in polytechnics in north east.
- 2) Examine the extent to which keyboarding teachers can effectively teach all practical aspect of keyboarding in polytechnics in north east.

Research Questions

- 1) What is the level to which teachers' content knowledge affect the teaching of keyboarding in polytechnics in north east?
- 2) To what extent can keyboarding teachers effectively teach all practical aspect of keyboarding in polytechnics in north east?

Hypothesis

A null hypothesis was formulated at 0.05 level of significant to guide this study:

Ho – There is no significant difference in the mean responses of male and female teachers' content knowledge of keyboarding in polytechnics in north east.

Methodology

This study adopted descriptive survey design since it is basically an enquiry to investigate teachers' content knowledge and its effect on the teaching of keyboarding in polytechnics in north east. The study was carried out in Ramat polytechnic, Maiduguri, Borno state and Federal polytechnic, Bala in Taraba state in north east, Nigeria, offering OTM programmes. The population of the study is 22 lecturers and 600 students' scores in keyboarding for three academic sessions. It comprises of 10 lecturers from Ramat polytechnic, (OTM), 50 ND 1 and 50 ND 2 students' scores in keyboarding, and 12 lecturers, from Federal polytechnic, (OTM) Bala, 50 ND1 and 50 ND 2 students' scores in keyboarding. The 50 students' scores in keyboarding in three academic sessions from both institutions were randomly chosen through Hat-Draw Approach. The population also served as sample because of its manageable size. A closed-ended structured questionnaire tagged "Assessment of Teachers' Content Knowledge and its Effect on the Teaching of Keyboarding Questionnaire (ATCKETKQ) was used for data collection. The questionnaire was a 4-point rating scale: Very High Level (VHL) -4, High Level (HL) -3, Moderately Low Level (MLL) -2, and Low Level (LL) -1 and Very High Extent (VHE) -4, High Extent (HE) -3, Moderately Low Extent (MLE) -2, and Low Extent (LE) -1. The drafted questionnaire was validated by three experts. One expert each from Department of (OTM), Ramat Polytechnic, Maiduguri and Federal Polytechnic, Bala, while the other one from department of Measurement and Evaluation, University of Maiduguri for content and face validity. To determine the internal consistency of the instrument, a questionnaire was administered to all 15 lecturers in department of (OTM) in Plateau state polytechnic, Barki-Ladi in North Central Zone, Nigeria. Data collected were analyzed using Cronbach alpha with a coefficient value of 0.86. The data collected regarding the research questions were analyzed using Mean and Standard Deviation, while the null hypothesis was analyzed using t-test. The researcher with the

aid of a well trained research assistant personally administered the 22 copies of the questionnaire to the respondents and were all retrieved back after two days interval in good conditions. It was an hundred percent returned. In discussing the questionnaire items, the mean scores which have 2.50 and above were regarded as agreed while mean scores which were below 2.50 were regarded as disagreed. T-test was used to test the null formulated hypothesis at 0.05 level of significant. If the probability value (p-value) is equal or greater than the level of significant (alpha) then the null hypothesis is not rejected. On the other hand, when the p-value is less than the level of significant the then the hypothesis is rejected.

Results

Research Question 1: What is the level to which teachers' content knowledge affects the teaching of keyboarding in polytechnics in North East?

Table 1: Respondents' mean rating on the level to which teachers' content knowledge affects the teaching of keyboarding in polytechnics in North East.

S/No	Constructs	Mean	SD	Remark
1	Content knowledge in keyboarding enables teachers Teach with confidence using strategies and certain Techniques to attain the subject matter goal	3.73	0.55	High level
2.	Enables teachers understand the nature and purposes of the Subject matter	3.18	0.59	High level
3.	Exposes teachers to the use of suitable pedagogy	3.45	0.51	High level
4.	Enables teachers to evaluate whether students have correctly given an answer to a problem	3.50	0.67	High level
5.	Enables teachers to organize the various tools that Are involve in the subject matter	3.73	0.46	High level
6.	Enables teachers to function effectively and efficiently in the Subject matter	3.73	0.55	High level
7.	Enables teachers to monitor students, watch them Closely and Model for them constantly on the subject matter	3.14	0.89	High level
8.	Enables teachers to successfully carry out the task of Teaching As well as organize the subject matter tools	3.36	0.73	High level
9.	Enables teachers to evaluate students' sitting position when typing	3.23	1.07	High level
10.	Gives teachers ability to select appropriate text to Meet the varying needs with a view to developing Students' knowledge	3.36	0.73	High level
11.	Enables teachers develop their lesson plan in a sequential order	3.55	0.67	High level
12.	Equips teachers with skills of thorough explanation of the Subject matter ethics	3.55	0.60	High level
13	Enables teachers interpret the subject matter and also Finds different ways to represent it and make it accessible to learners		3.27	0.63 High level
	Grand Mean		3.44	0.66 High level

Source: Field Survey, March 2021

The above table 1 comprises of thirteen constructs on teachers' theoretical content knowledge and its effects on the teaching of keyboarding in polytechnics in north east. All constructs have a mean scores ranging from 3.14 – 3.73. The grand mean rating of the respondents on the thirteen identified constructs in table 1 shows 3.44 on a four points modified Likert rating scale. This indicated that the respondents agreed that to a high level the thirteen constructs identified in the table are effects or key factors influencing the teaching progress of keyboarding in polytechnics in north east.

Research Question 2: To what extent does keyboarding teachers can effectively teach all practical aspect of keyboarding in polytechnics in North East?

Table 2: Respondents mean rating on the extent keyboarding teachers can effectively teach all practical aspect of keyboarding in polytechnics in North East.

S/No	Constructs	Mean	SD	Remark
14.	Content knowledge enables keyboarding teachers Demonstrate appropriate competent on mastering Hand-on machine	3.50	0.67	High extent
15.	Gives teachers competent to type with the correct Fingers	3.45	0.67	High extent
16.	Gives teachers competent of proofreading and editing	2.95	0.65	High extent
17.	Gives teachers to type, copy, cut paste and save in Microsoft word	3.50	0.80	High extent
18.	Competent to bold, underscore, italicize characters, In Microsoft word	3.45	0.74	High extent
19.	Competent to delete, back-space and print in Microsoft word	3.41	0.67	High extent
20.	Competent to align margins and insert footer, header	3.32	0.65	High extent
21.	Competent to type correspondence with tabular Statement in Microsoft word	3.27	0.63	High extent
22.	Competent to display layout of business letters In micro-soft word	3.14	0.89	High extent
23.	Competent to type financial statement in Microsoft Excel	2.86	0.83	High extent
24.	Competent in the use of leader dots	2.77	0.69	High extent
25.	Competent to display different styles/layout of Letters (blocked style, semi blocked style etc)	3.09	0.75	High extent
26.	Competent in filling-in forms, form letters and Invoices	3.00	0.87	High extent
27.	Competent to type quickly with accuracy and speed With hand-on machine	3.41	0.73	High extent
28.	Competent to observe correction signs when typing From manuscripts	3.41	0.73	High extent
29.	Competent to type with eyes off the keyboard and Keep them on the text.	3.05	0.99	High extent
Grand Mean		3.22	0.75	High ext

Source: Field Survey, March 2021

Table 2 comprises of sixteen constructs on teachers practical content knowledge on the teaching of keyboarding in polytechnics in north east. The respondents considered all sixteen constructs in the table as effects on the practical teaching of keyboarding in polytechnics in north east. The results revealed a mean scores ranging from 2.77 – 3.50. The grand mean rating of the respondents on the sixteen constructs in the table shows 3.22 on a four points modified Likert rating scale. This implied that the respondents agreed that to a great extent all constructs are relevant characteristics in teachers who have practical content knowledge in teaching keyboarding in polytechnics in north east.

Ho: - There is no significant difference in the mean responses of male and female teachers' content knowledge of keyboarding in polytechnics in north east.

Table 3: OTM male and female teachers' opinion on content knowledge n teaching keyboarding in polytechnics in north east

Gender	N	Mean	SD	SD error Difference	F	Sig.	T-cal	Df	Level of sig.	Decision
Male	11	44	0.164	1.12301	0.041	0.842	-1.376	20	0.05	
Female	11	44	0.164							NS

The result from table 3 shows that the p-value of 0.842 is greater than the t-calculated of -1.376 at 20 degree of freedom and 0.05 level of significant. Therefore, the null hypothesis which stated that there is no significant difference in the mean responses of male and female teachers' content knowledge on the teaching of keyboarding is not rejected.

Discussion of Findings

The result from table 1 revealed that all constructs on teachers theoretical content knowledge are effect on teaching and learning of keyboarding in polytechnics in North East. This finding is in consonance of Rice and Kitchel (2018) that teachers content knowledge greatly influence how teachers broke down content of a subject for students understanding the fundamental elements of subject being taught. This findings also corroborates the view of Ozden (2017), Jones and Moreland (2017), that teachers' content knowledge had positive influenced on the effective teaching and practice of Agriculture content and also teachers' content knowledge is a central concept of teaching a subject for effective learning.

The result from table 2, revealed that all constructs on practical teachers' content knowledge had mean scores of 2.50 and above, which proved that teachers' practical content knowledge is relevant and a necessity on the effective and efficient teaching of keyboarding in polytechnics in north east. This finding is in consonance with the work of Ishola and Udofia (2017), Ogar (2016), who affirmed that teachers' mastery of subject matter is a component that determines the extent of students learning and achievement. They further said that content knowledge determines the quality of learning activities and thus a teacher with good mastery of subject area is characterized to having good knowledge of classroom management, use adequately learning materials, maintaining clarity of thought, bold and confident of what he wants to teach and teach effectively and efficiently.

This finding also agrees with the view of Clermont and Krajcik (2019), that teachers' content knowledge is an important factor in determining gains in students' achievement and is relatively connected to students' performance. The result of the null hypothesis shows that there was no significant difference in the mean responses of male and female teachers' content knowledge on the effect of teaching keyboarding in polytechnics in north east.

Conclusion

Teaching occurs in direct face-to-face interactions with students. Teaching also involves analyzing students work, making choices about content based activities for instruction, choosing appropriate question to ask instructions, and many other content intensive practices that support the interactive work of teaching. From the findings of the study, it is therefore, concluded that teachers' content knowledge is a key factor that is crucially important to the improvement of teaching. This implies that only keyboarding content knowledgeable teachers can effectively and efficiently impart keyboarding skills, values, competency on students in polytechnics in north east.

Recommendations

In line with the conclusion, the following recommendations are made:

- (1) Teachers who major in office education should be assigned to teach keyboarding because they have in-depth theoretical and technical knowledge of the subject and also well groomed in keyboarding teaching pedagogy.
- (2) Teachers who are exposed to technical know-how in keyboarding should be allocated keyboarding course to teach in order to boost students learning achievement.

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