

---

## **Towards a Panacea for Demystifying Typewriting/Computer Keyboarding Presentation in Nigerian Secondary Schools**

---

By

**DR. ROBERT A. ESENE**

*Department of Office Technology and Management,  
School of Business Studies,  
Delta State Polytechnic,  
Ozoro — Delta State.*

### **Abstract**

*This study investigated the Demystifying of Typewriting/Computer Keyboarding Training in Nigerian secondary school classrooms. The study adopted survey design in which a questionnaire which consisted of 40 items was distributed to 105 respondents drawn from, the 104 public secondary institutions located in Delta State Senatorial District. The data collected was analyzed with Spearman's rho, descriptive statistics, mean score and standard deviation. The findings of the study, among others are that the typewriting teachers were familiar with the keyboarding tasks; that the typewriting-room laboratory had the state of the art materials and equipment for teaching and learning processes; that the typewriting teacher is a manager and coach in classroom instruction, and that the teachers were not completely familiar with all the methods and strategies of teaching keyboarding operation. Based on the results of the study, some recommendation are made that would adequately and sufficiently equip teachers with the knowledge, skills and competencies required for keyboard training of students in Nigerian school system made.*

A long time ago, people used to do all their writing with pens. It took a very long time to complete many documents. However, the story of the typewriter tells us that the first typewriter recorded was invented by an Englishman Gilbert Wright in Britain who took out a patent for it (No. 395 of 1714) in the days of good Queen Anne, but that there was no general demand for such a machine, and if there had been, that could not have been met. The use of the typewriter as an aid to producing typewritten

documents was occasioned by the rapid improvement in transport and communication which emphasized the necessity for some similar acceleration in business methods and office work. At about the same period, the development of machine-tools and repetition-processes made it possible to produce piece-meal, and to assemble in quantity complicated mechanisms (Esene. 1997).

Unlike the shorthand skill of writing which has remained essentially the same since the earliest modern writers, the typewriting skill has changed considerably in its essential techniques from the two-four-six and eight-finger method to the ten-finger method. Apart from the changes in the methods of fingering, there is also a change from sight” typing to “touch” typing.

The National Policy on Education sees typewriting and other vocational subjects quite differently. The policy stresses among other things, the importance of skill development in the youths in preparation for meaningful living in society. It also recognizes that individual differences have a great role to play in the development of individuals and society (FRN, 2004). As a result, not everyone has the capability to pursue grammar school or technical type education. The policy has created a general awareness of technical education in the mind of the people. The inclusion typewriting in the junior secondary school syllabus of 1982 indicates the importance government places on education that leads to the development of office skills.

All typewriting training starts from the keyboard. Thus, the keyboard operation is an indispensable activity in typewriting. The keyboard is so fundamental that trainers cannot afford to leave its presentation to chance. The keyboard arrangement is almost the same on all standard typewriters. The alphabet is arranged in three rows, excluding the figure and numerals. See figure one.

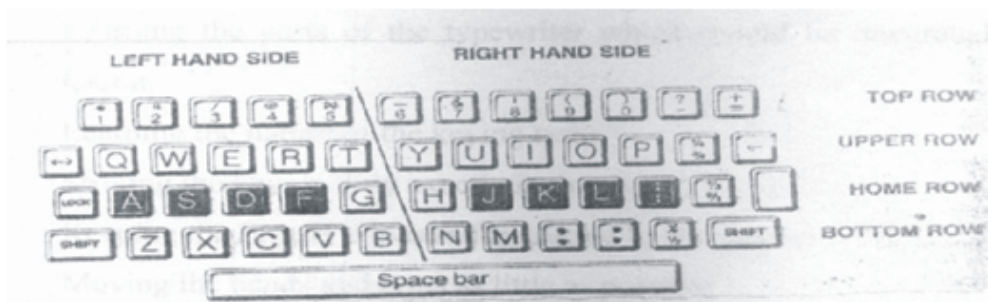


Fig.1 – The Typewriter Keyboard

The manual typewriter keyboard has 51 keys as depicted in figure one above. Unlike the manual typewriter, the computer has a similar type-face. However, computer has between 84 108 keys, depending on the type and model. See figure two.



**Fig. 2 The Computer Keyboard**

Okoduwa (2009) noted that keyboarding is the process of learning the correct manipulation of the computer or typewriter keyboard and using that keyboard for basic data input. It is a cumulative psychomotor skill involving the touch method of input into the keyboard. Thus, keyboarding is a psychomotor skill that develops, as does any other motor skill, through cognitive, associative and autonomous stages. The main objective of keyboarding studies is to allow students to become more proficient in computer or typewriter usage and to avoid re-teaching of keyboarding skills. Naoko1o (1998) observed that the goal of keyboarding instruction is to enable students to utilize the computer keyboard more efficiently and effectively and to avoid lengthy re-teaching when students have acquired improper keyboarding techniques.

In keyboarding instruction, certain activities are needed to be carried out by the students under the supervision of the teacher. These learning activities include:

- (1) Learning the parts of the typewriter which should be integrated into the daily lesson.
- (2) Learning the nature of the keying tasks
- (3) Striking the keys evenly exactly in the centre.
- (4) Keeping the fingers curved as instructed by the teacher
- (5) Moving the hands and arms as little as possible
- (6) Reading-for-keying skill
- (7) Observing the increase in the degree of response stability, increase accuracy or stimulus and increased spontaneity of responses.

Ndinechi (1990) pointed out that keyboarding instruction cannot be effectively taught if the teacher fails to recognize the components to be taught. Canning (2000)

noted that students spend greater part of their lesson on keyboarding training because other tasks depend on the ability of the students to master the keyboard thoroughly.

The teaching and learning of keyboarding cannot be accomplished in the absence of some basic instructional materials and equipment. According to Gartside (1998), to equip a typewriting room adequately is a costly exercise and to some extent, this may account for some of the objections raised from time to time to the provision of typewriters in schools. For keyboarding instruction to succeed, the following equipment must be available: typewriters of varying make/models, electric typewriters, desks and chairs, copyholders, demonstration stand and above all, visual aids.

According to Tonne, Popham and Freeman (2000), the teacher is a manager in the teaching learning-situation; he does this function by teaching the students by moving from simple to complex. He is the coach of the students, both as a group and as individuals. His prime responsibility is to develop and later protect from deterioration. good technique in every typing situation. Everything that he does should emphasize the habits and motions that comprise the pattern of the expert and de-emphasize all activities that hamper building and maintaining good techniques. 'To do this, according to Ndinechi (1990), the typewriting teacher positions himself in front the class using demonstration stand. He watches his students' technique both when they are in the class and when he analysis their papers. He should surround his classes with examples of good techniques at all times, his own demonstrations, the sound of the typing of a superior student, bulletin-board examples of good work, charts showing correct techniques, and films illustrating expert performance. The teacher uses check lists to help students make self-analyses of their training needs, and suggests remedial measures to overcome their technique deficiencies. In keyboarding instruction, there are essentially three kinds of machine-operation technique drills. They are keyboard operation drills, machine-parts- operation drills, and special-operating technique drills. In the keyboard operation drills, the teacher helps students to develop good key striking, that is, correct hand and arm positions and correct sound. Machine-parts-operation drills require students to practice margin stops, margin release, backs pacer, cleaning the typewriter, shift key and shift lock and changing the ribbon. In the special-operating technique drills. activities are meant to improve the student's basic skill e.g drill to improve backspace centering, the use of erasing, re-inserting papers, crowding and spreading letters and the production carbon copies (Esene, 2008).

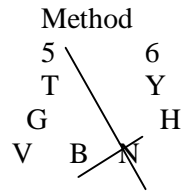
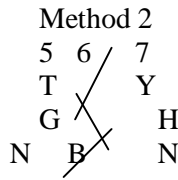
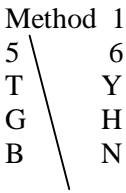
Keyboarding training requires some scientific and systematic approaches if the trainees must learn and make progress in their course-programme (Esene. 2001) Although there are many methods and strategies used for presenting keyboarding instruction, it is, however, difficult to ascertain if the teachers are aware and thoroughly familiar with them (Esene, 2007).

Intensive studies in the United States show the frequency distribution of the alphabetic characters on the present standard keyboard as follows:

First row:	52% E being the most frequently used letter.
Second or home row:	32% A being the most frequently used letter.
Third row:	6% N being the most frequently used letter.

With the present arrangement of the keys, the right, and usually more efficient, hand does only about 43 per cent of the work, leaving 57 per cent to be done by the left, and usually less efficient hand. It has been estimated that if the ten letters most frequently used were grouped on the guide row, 70 per cent of normal matter could be typed without vertical finger reaches of any kind. Esene (2000) reported that typewriting manuals use three different methods of keyboard-divisions between left-hand and right-hand operation. These are:-

Method 1 Method 2 Method 3



In methods 1 and 2, the keys for 6 and B are operated by the first fingers of different hands and in method 3 by the finger of the same, the right hand. Choice of method must be made when training begins and, having been made, must be retained without variation in all subsequent typing. Before actual typing is allowed to begin, students should be thoroughly drilled in locating the guide keys without looking down at the keyboard.

It is important that the typewriting teacher is guided on the sequence of presentation of the keys right from the first day. This is very important for student-teachers who may be teaching typewriting for the first time. The number of days necessary to cover the alphabetic keyboard varies from teacher to teacher, depending on the experience of the teacher and the status of the students. However, Robinson (1996) in his study of teaching practice in secondary schools, found that majority of the teacher preferred a keyboard introduction plan that uses from 7 to 12 lessons to cover the alphabetic keyboard. Ahukannah (1987) found that 25.60% of the respondents in his study of Imo State schools in Nigeria prefer to cover their keyboard plans in 10 lessons, 20.73% prefer 12 lessons while 15.85% prefer 14 lessons. 13.42% prefer 8 lessons while

13.42% prefer 18 lessons, 10.98% prefer 6 lessons. This means that a greater number of business educators in Imo State prefer to teach the keyboard in 10 lessons, excluding consolidation lessons when no new keys are taught. This is closely followed by the preference for 12 lessons. Ehiamentolor (1990) recommended that in the Nigerian education curriculum, especially for the junior secondary school, the keyboard should be learned for two terms since very little time is devoted to typewriting lesson a week. Six methods viz, horizontal, vertical, pivot, skip-around, the third row reach, and pipe-organ arc recognized for presenting keyboarding instruction in type writing. However, experience has shown that three out of the six are known and widely used by most typewriting teachers. Those prevalently used by business educators in the course of

keyboarding instruction are horizontal, vertical and skip-around methods (Mbaecue.1998).

Gartside (1998) revealed his preference for horizontal method as he puts it. “for a long time, the most popular method has been the horizontal apparently because the method brings all fingers into use from the start, as well as establishes correct striking at the outset and thus, prepares the way for the subsequent finger reaches”.

When this method is used, the typewriting teacher begins his lesson with:

asdf left hand ;lkj and later a; sl dk fj  
f j fj fj fj dk dk dk dk sl sl sl sl a; a; a;

The home keys having been thoroughly drilled in one of the ways mentioned, the first-finger stretches from F to G and from J to H. This operation is extended to first and third rows respectively. On the other hand, the vertical method to keyboarding training originated before the invention of the shift-key device, at a time when typewriters had separate key-banks for upper-case and lower-case characters. It was then also referred to as the rational method. Finger stretches from a home key position over such a keyboard were not possible and it was therefore an advantage to group keys. Vertically in files according to individual fingers rather than the horizontal method. Reasons claimed for this preference are that students learn to think from the beginning and progress appears rapid since the easiest finger controls are mastered first. The operation proceeds like this:

FRC left-hand JUN right-hand

As the students improve on the first lesson, the teacher moves to the next lesson thus:

GTV left-hand I-IVB right-hand  
JUG HUG TUG FRY TRY and so on.

Esene (2008) reported that from experience and studies, a handful of teachers adopt and practice the skip-around method. This method, according to him, introduces the letters in apparently haphazard order, by introducing to the students at the beginning of the lesson, the typing of vowels, punctuation marks and capitals, thereby making it possible for students to type words and even sentences. Advocates of this method state that by its adoption, errors of transposition are drastically reduced; it very quickly provides a wide range of meaningful practice material including properly punctuated sentences as well as gives confidence since students are typing subject-matter that makes sense almost from the beginning of keyboarding instruction. Russon and Wanous (1987) described the following procedure for teaching the keyboard under the skip-around method:

“...the home row is taught first. This is an important principle because a feeling of security is built up in the typing by giving him a base of operation in the home keys. The new keys following the home row are then presented in logical fashion. Each day two to four new letter keys are presented...”

There are three methods of keyboarding training that are never used and/or partially used by the teachers. These methods are: pivot, pipe-organ and the third-row reach.

The pivot method of keyboard training received a good and great deal of attention since the Second World War. The word "pivot" is used only to describe the position of the hands during the learning stage as a means of developing a complete sense of the central position at the keyboard, the fingers "pivoting" as it were from the guide-row. As a first step, the learner is required as with the horizontal method, to establish thoroughly his/her skill in operating the key on the guide row, after which each of the fingers is trained in turn to respond directly, and eventually automatically, to the sight of the individual letters in the textbook. Working from its guide-keys position and operating the keyboard division in the chart/diagram above, the operation begins as follows:

RC and 4 left-hand finger UN and 7 right-hand finger  
EX and 3 left-hand finger IM and 8 right-hand finger  
WZ and 2 left-hand finger O, and 9 right-hand finger  
GTV and 5 left-hand finger HYB and 6 right-hand finger

These characters, with F and J, are then integrated by drill, first with the characters A and ; and then with the intervening characters on the guide row Under the pipe-organ method, the left hand is moved completely from the home row bank to the top row so that the left fingers rest on 2,3,4,5, and 6. These left fingers do not return to the home-row bank but remain on the top-row after striking the number keys. The right remains on the home-row to strike key, comma, period, space bar, and shift key. The numbers 7,8,9 and 0 are struck in the conventional manner from the home-row by the right-hand. As regards the Third-Row Reach Method, the fingers are unnaturally placed on the third-row (upper row) bank so that the top-row (the number and s symbol) becomes close enough to the "temporary" home keys. The left hand fingers are placed over q, w, e, and r while the right hand fingers rest on u, i, o, and p. Thus, a home rest base is established on the third-row bank instead of at the usual home-row bank.

Attempts have been made here to present the various methods of teaching the numeric keys. The choice of method rests on the teacher, with particular reference to his/her education, training, orientation, personal preferences and the textbook he/she finds which both the teacher and students will use.

A careful observation of the foregoing principles led Robinson (1996) to the following sequence of introducing the letter keys in ten lessons with live "breather" (consolidation/review) lessons: 1: asdfjkl; 2: consolidation (on new keys taught) 3: the left shift key 4: consolidation 5: it period (.)  
6: r o c 7: uv right shift key 8: consolidation 9: w comma (,) g  
10: n x p 11: q m tabular 12: consolidation 13: yz colon (:)  
14: b question (?) backspace  
15: consolidation

Robinson advised from his findings that for good results, the introduction of the number and symbol keys should be willfully delayed by at least, live lessons aler the alphabetic keyboard. This period is needed for skill-building on the alphabetic keys presented and to ensure that the knowledge acquired on the keyboard does not inhibit the learning of the number and symbol keys. Therefore continuing, the above example. The number and symbol keys are presented from lesson 21 (after a break between 15 and 21) as follows: Lessons 21: Letter 1 as 1; 8 22: Apostrophe ('): 4 Exclamation (!) 23:

Dollar (\$) 24: Ampersand (&); 2 25: Quotation (""); 6 26: Underline ( ): 3 27: No. or lbs (//); 9 28: Left parenthesis ( 0 29: Right parenthesis ) 30: Percent (%): hyphen (-)

Apart from these methods of keyboard training, there are also strategies of teaching typewriting keyboarding. These strategies arc the individualized and group instructions.

Keyboard training can be easily taught on individual basis. In this process. the teacher is able to pay attention to the learning problems of the individual students. Once the teacher has got the student started on a project, he could go round to see if any of the students has a problem which must be corrected immediately 1/hiaiiietalor (10X) reported that group instruction of keyboard presentation is a traditional technique, noting that it is necessary to group the beginning typewriting students together since at this stage, the principles or theories that would aid practice are taught.

While individualized instruction is highly desirable, the teacher of typewriting must ensure that the students have been exposed to cognitive learning which can be done n a group situation. It is much easier for the teacher to help a group of students develop cognitive and affective knowledge. The motivation to learn keyboarding can he developed through peer influence and thereby positive attitude (affective) could enhance skill training.

### **Statement of the Research Problem**

It has been observed that Nigerian secondary school students who offer and learn business studies (typewriting/computer) spend longer time in keyboarding training. The longer time spent on keyboarding has apparently affected the students negatively in the production typewriting output work. Some of the factors responsible for the long time spent on keyboard coverage are lack of knowledge of pedagogy and in-depth knowledge in the content area. This is the basis on which this study is undertaken.

### **Purpose of the Study**

The purpose of this study was to find solution for demystifying typewriting/computer keyboarding instruction among Nigerian secondary) school students. Specifically, the study will:

- (a) Identify the tasks involved in keyboarding training



- (h) Examine the typewriting room organization.
- (c) Ascertain the roles of the teacher at keyboarding presentation.
- (d) Assess the methods/strategies of teaching keyboard to students

### **Research Questions**

This study sought to answer the following research questions.

1. What are the components of keyboard instruction?
2. What are the instructional materials and equipment needed for keyboarding presentation?
3. What are the roles of the typewriting teacher?
4. What are the methods and strategies used for keyboarding instruction?

### **Method**

The survey design was adopted to accomplish the purpose of the study. The survey studies was considered appropriate because it described essentially what is on ground without any attempt to manipulate the variables.

The population of this study consisted of all the business educators who teach in the 104 public secondary schools in Delta State Central Senatorial District. The available records at the Ministry of Education, Asaba show that there are one hundred and four (104) public secondary schools and one hundred and five (105) business educators. The entire population was made use of because it was manageable and the respondents were easily reached. Delta State Central Senatorial District has eight (8) local government areas with four (4) educational zones. See table 1.

**Table I - Population Distribution by Local Government Areas**

<b>Local Government Areas</b>	<b>Number of Public Secondary School</b>	<b>Number of Business Educators</b>
Ethiope East	13	13
Ethiope West	6	8
Okpe	8	5
Sapele	17	12
Ude	5	9
Uvwie	8	26
Ughelli North	27	27
Ughelli South	14	5
8	104	105

Source: Delta State Ministry of Education, Asaba, 2010.

The instrument used was validated by three senior lecturers from the Delta State University, Abraka; University of Benin and Ambrose Alli University, Ekpoma who are experts in the fields of Office Technology and Management and 'test and Measurement. A reliability test conducted was determined by using Pearson Products Moment Correlation Co-efficient which yielded 0.74. The instrument used for data collection 'as based on 5- point rating scales as follows:

Strongly agree 5 points, agree 4 points, disagree 3 points, strongly disagree 2 points, Undecided 1 point.

Items which received 3.50 and above were accepted while those items receiving 3.49 and below were rejected.

An instrument which consisted of 40 questionnaire items and which covers the four research questions was used to collect data for the study. The data gathered were analyzed with mean and standard deviation. The presentation is done according to the research questions raised. See tables 2, 3, 4 and 5. The instrument was administered by the researcher and/or his assistants to the 105 business educators in all the 104 public secondary schools in the Delta State Central Senatorial District. The retrierral of the completed instrument from the respondents was done the same day of administration. Presentation of Data, Analysis and Interpretation

**Question One -**

What are the tasks involved in keyboarding operation?

**Table 2 -Tasks involved in Keyboarding Operation(N = 105)**

Items	Tasks involved in keyboarding operation	Mean	SD	Decision
7	Parts of the typewriter	4.72	.39	Accepted
8	Nature and scope of keying	4.71	.40	Ditto
9	Striking the keys	4.71	.40	-
6	Keeping the finger curved	4.69	.48	“
4	Moving the hands and arms	4.69	.48	“
5	Reading-for-keying skills	4.66	.50	“
1	Observing the increasing in the degree of response stability	4.65	.54	“
2	Increase in accuracy or stimulus	4.65	.59	“
3	Increase in spontaneity	4.64	.60	“

Field trip, 2010.

Regarding Table 2, the nine questionnaire items had mean scores ranging from 4.64 to 4.72. The conclusion here is that all the tasks are recognized and accordingly performed by the typewriting teacher.

**Question Two**

What are the instructional materials and equipment needed for keyboarding training.

**Table 3 Typewriting Room Organization (N 105)**

Items	Tasks involved in keyboarding operation	Mean	SD	Decision
18	Typewriters of varying models	4.82	.37	Available
17	Electric typewriters	4.82	.37	Ditto
14	Desks	4.80	.38	-
15	Chairs	4.80	.38	“
12	Copyholders	4.80	.38	“
13	Demonstration stand	4.70	.40	“
19	Visual aid	4.70	.41	“
11	Increase A 4 paper	4.68	.42	“
10	Bulletin – board and keyboard charts	4.64	.44	“
16	Steel filing cabinets/duplicating Machines	4.63	.56	“

Source: Field survey conducted, 2010.

As shown in Table 3, questionnaire items 18 and 17 recorded mean score of 4.82 each; items 12, 14 and 15 scored 4.80 each; items 13 and 19 received 4.70 each; items 11, 10 and 16 recorded mean scores of 4.68, 4.64 and 4.63. From the responses of the respondents, it does appear that the typewriting room adequately houses available materials and equipment for keyboarding operation with reference to the teaching of keyboarding operation drills; machine-parts-operation drills; and special-operating technique drills.

**Question Three**

What are the functions/roles of the Typewriting Teacher in Keyboarding presentation?

**Table 4: The Roles of the Typewriting Teacher (N 105)**

Items	Tasks involved in keyboarding operation	Mean	SD	Decision
20	Teacher serves as a coach both as a group and as individuals	4.86	.39	Accepted
24	Develops good techniques of typing	4.86	.40	Ditto
25	Emphasizes the habits and motions that comprise of good patterns	4.86	.40	-
21	De-emphasizes all activities that hamper skill-building	4.84	.53	“
23	Maintains good techniques	4.84	.48	“
222	Watches students techniques both at work and when he analyzes their papers.	4.84	.53	“
28	He surrounds his classes, giving concrete examples	4.83	.51	“
29	Demonstrates before the students	4.83	.51	“
31	Displays good examples on the bulletin-boards	4.82	.53	“
30	Uses charts to show correct techniques	4.80	.45	“
32	Uses check lists to help students make self analyses	4.78	.55	“
27	Suggests remedial measures to overcome their deficiencies	4.76	.58	“
26	Asses students' corrected work	4.74	.60	“

Source: Field studies, 2010

With respect to the roles/functions of the typewriting teacher (see table 4), questionnaire items 20, 24, and 25 recorded a mean score of 4.86 each; items 21, 23 and 22 scored 4.84 each; items 28 and 29 respectively recorded 4.83: items 31, 30, 32, 27 and 26 recorded mean, scores of 4.82, 4.80, 4.78, 4.76, and 4.74. This means that all the items received 3.50 mean and above. From the above, it is proper to conclude that the roles of the typewriting teacher is better appreciated with respect to keyboarding training. Question four

What are the methods and strategies used for keyboarding instruction?

**Table 5 Methods of Teaching Keyboard Training (N- 105)**

Items	Methods/strategies of Teaching Keyboarding	Mean	SD	Decision
39	Horizontal method	4.35	.57	Accepted
40	Vertical method	4.33	.59	Ditto
35	Skip-around method	4.27	.60	“
33	Individualized instruction	4.20	.72	“
37	Group instruction	3.99	.82	“
34	Third – row method	3.47	.87	“
36	Pivot method	3.22	1.21	“
38	Pipe - Organ method	3.18	1.24	“

Sources: Field trip, 2010

With reference to Table 5 above, the responses of the respondents showed that questionnaire items 39, 40, 35, 33 and 37 received mean scores 014.33. 4.33. 4.27. 4.20 and 3.99; while items 34, 36 and 38 received mean scores less than 3.49. The conclusion here is that the typewriting teachers are familiar with, and uses live methods/strategies viz: horizontal, vertical and skip-around methods and individualized and group instructions when teaching keyboarding operation.

## **Results and Discussion**

The purpose of this study was to examine typewriting/computer keyboarding operation and to determine the methods of presentation to the Nigerian secondary school students. The finding of the study showed that all the components and tasks involved in keyboarding instruction are taught by the business educators (see ‘fable 2). Ibis was supported by the studies of Nwaokolo (1998) which noted that the objective of keyboarding coverage is to allow students to become more proficient in computer and typewriting usage, and to avoid re-teaching of keyboarding skills. The result of the study points to the fact that keyboard mastering is fundamental to subsequent tasks in typing/computer work. The result of the study also revealed that the typewriting room/laboratory are organized and well equipped with materials and equipment (see fable 3). This was supported by an earlier studies of Giartside (1998) who noted that fur keyboarding instruction to succeed, some basic materials and equipment must be available and adequate on the basis of students’ population.

l’he finding of the study showed that the teacher must he physically present in any teaching and learning situation and function and play his traditional roles to the students (see ‘Fable 4). This was supported by the studies of Ndinechi (1990) and Tonne (2000) which noted that the teacher of typewriting performs his role to the students as individuals and as a group. Furthermore, the study revealed that of the eight methods/strategies of presenting keyboarding instruction, the teachers are basically familiar with, and uses majorly five methods (see Table 5). Mhaezue (1998) and

Gartside (1998)'s studies supported the result of the study when they noted that most typewriting teachers have preference for horizontal, vertical, and skip-around methods as well as individualized and group instructions for presenting keyboarding instruction.

### **Conclusion**

Typewriting is one of the vocational business subjects included in the curricula for the junior and senior secondary school system. Being the first time the subject is recognized, though not necessarily the first time it is offered and taught in the formal school system, there is need for academics to focus attention on the content and pedagogy for teaching it. The National Policy on Education (FRN, 2004) sees typewriting differently from any other subjects. The policy stresses among other things, the importance of skill development in the youth in preparation for meaningful living in society. It also recognizes that individual differences have a great role to play in the development of individuals and society. Keyboarding operation is the first part and essential component of typewriting copying and output tasks. Since students' efficiency, effectiveness and productivity in typewriting depends fundamentally on adequate and proper coverage of keyboarding training, it is suggested that the tasks involved in keyboard operation and the organization of classroom in terms of materials and equipment should be recognized and taught accordingly. In the same vein, the teacher's functions and roles should be properly defined and spelt out, and above all, teachers should examine and practice all the methods and strategies with a view to using those methods that would enhance early keyboard coverage and general efficiency in all typewriting copying and out tasks. In this way, the philosophy of typewriting which says that learning is automatized and not intellectualized would be accomplished.

### **Recommendations**

On the strength of the results of the study and the conclusion reached, it is hereby recommended that:

- (a) All the tasks involved in keyboard operation should be recognized and defined right from the onset in order to serve as a guide to the teacher and the students.
- (b) Although the typewriting-room/laboratory had the state of the art equipment and materials as recommended by the Comparative Education Study and Adaptation Centre (CESAC), efforts should be to step up the quantities and qualities in view of the number of students desiring for enrolment annually.
- (c) The teacher should properly identify his functions and roles as he is an indispensable manager in the teaching-learning situation.
- (d) Teachers should be trained and retrained in content and in pedagogy in order to equip them to face the challenges posed by the dynamism of typewriting and the requirements of the National Policy on Education.

### References

- Ahukannah, L.I. (1987). Teachers' Preference and Practices in Keyboard Sequence: A case study in *Business Education Journal* 2(1), April, 101 110.
- Canning, R.W. (2000). *Teaching of/Ice skills*. London: Pitman Publishing Limited.
- Ehiamentalor, E.T. (1990) *Business and economics education: principles' and methods*. Ibadan: Evans Brothers (Nigeria Publishers) Limited.
- Ehiamentalor, E.T. (1988). Teaching Typewriting in a Formal School System in *Journal / Research in Curriculum (JORIC)* 6 (1), January, 219 225.
- Esene, R.A. (2008). A critical analysis of a variety of teaching methods used by graduate business educators in selected secondary schools in Delta State in *Nigerian Journal of Research and Production* 15 (2), November, 222 229.
- Esene R.A (2008). *Methods of teaching vocational business subjects*. Aghor: Royal Pace Publications.
- Esene, R.A. (2007). Increasing the productivity of the secondary school business studies teachers in *Knowledge Review A multidisciplinary Journal*, 15 (1), December. 102 - 105.
- Esene, R.A. (2001). An evaluation of the business subjects curriculum for Nigerian secondary schools. *Unpublished Ph. D Thesis* submitted to the school of postgraduate studies, University of Nigeria, Nsukka.
- Esene, R.A. (ed.) (2000). *Paragon typewriting book one*. Aghor: Royal Pace Publications.
- Esene, R.A. (1997). *A new comprehensive course on typewriting volume one*. Aghor: Central Books Limited.
- Federal Republic of Nigeria (2004): *National policy on education*. Ahuja: NERDC Press.
- Gartside, L. (1998). *Teaching business subjects — the modern approach*. London: Macdonald and Evans Limited.
- Mbaezue, A.N.C. (1998). The Place of Typewriting in the Current Computer Application in Nigerian schools in *Journal of Business and Office Education*, I (1), November, 31 35.

- Ndinechi, G.1. (1990). A guide for effective typewriting instruction in the secondary schools in *Business Education Journal*, 2 (2), September. 1 3 IS).
- Nwaokolo, P.O. (199S). *Instructional strategies in business education*. IagosTivolick Printing Press.
- Okoduwa. C.A. (2009). Innovative methods of instruction for teaching keyboarding in Nigerian schools in *Journal of Business and Management t/tidies*, 3 (1). December, 172 - 179.
- Robinson, J.W. (1996). *Strategies of instruction in typewriting*. Cincinnati: South-Western Publishing Company.
- Russon, A.R. & Wanous, S.J. (1987). *Philosophy and Psychology of leaching typewriting* 3rd ed. Cincinnati: South-Western Publishing Company.
- Tonne, H.A., Popham, E.L. & Freeman, M.H. (2000). *Methods of teaching business subjects*. New York: Gregg Division McGraw-hill Book Company.