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Enriching Keyboarding Skills of Student Teachers at St. Joseph's College of Education, Ghana

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Abstract:
About ninety-nine per cent (99%) of the Diploma in Basic Education (DBE) year one A (1A), students at St Joseph's College of Education, Bechem and other less endowed institutions have not had much or have had no previous insight in ICT education and its accompanying facilities. Student Teachers of the Colleges of Education who are the cornerstone of the society and the nation at large cannot be left out in this information age. To help address this situation, the researchers made use of qualitative research methodology together with some of the sampling techniques to collect reliable and valid information on the problem. Notwithstanding, questionnaire, interview and observational research methodologies were employed in gathering relevant information from the research population. The results and findings of this study revealed the true picture of the problem and its effects on students' use of technological equipment.

Keywords: Student teachers, St Joseph's College of Education, keyboarding skills, activity method, action research

1. Introduction

The swell of Information and Communications Technology within Africa and its attendant benefits brings hope that the local socio-economic growth that can be propelled through its introduction. Notwithstanding the progress made, public education has failed to meet prospects in terms of coverage, quality, equitability and economic benefit. Most teenage school leavers are deficient in basic numeracy and literacy skills, as well as craftsmanship, and technical skills. Graduates are ill-prepared for either formal second cycle education of good standards or for a life of work and continuous learning for self-development.

It is an established fact that basic education provides the essential building blocks to continue to higher levels of education and for those who do not continue to higher education, it provides the foundation upon which job-related skills are developed.

1.1. Review of Related Literature

1.1.1. Theory of Keyboarding Skills

Encarta (2009) defines computer keyboard as 'a keypad device with buttons or keys that a user presses to enter data, characters and commands into a computer'. According to Encarta, keyboards emerged from the combination of typewriter and computer-terminal technology which are fundamental pieces of personal computer (PC) hardware.

According to Wikipedia (2008), the free web encyclopedia, computer 'keyboard is an input device partially modelled after the typewriter keyboard which uses an arrangement of buttons, or keys which act as electronic switches.

A keyboard typically has characters engraved or printed on the keys, and each press of a key typically corresponds to a single written symbol. However, to produce some symbols requires pressing and holding several keys simultaneously or in sequence. While most keyboard keys produce letters, numbers or signs (characters), other keys or simultaneous key presses can produce actions or computer commands.

In normal usage, the keyboard is used to type text or numbers into a word processor, text editor, or other program. In a modern computer, the interpretation of key presses is generally left to the software. A computer keyboard distinguishes each physical key from every other and reports all key presses to the controlling software. Keyboards are also used for computer gaming, either with regular keyboards or by using special gaming keyboards which can expedite frequently used keystroke combinations. A keyboard is also used to give commands to the operating system of a computer, such as the Control-Alt-Delete combination, which brings up a task window or shuts down the machine (Wikipedia, 2008).

From the foregoing literature, one can notice that a keyboard is a basic input device and therefore computer system may be meaningless without keyboard. Keyboard is very essential when it comes to entering data, issuing commands, playing games and also every activity one can perform with the computer. In this direction, helping students to acquire basic keyboarding and mouse skills (typing skills) will surely be of help.

Many people who use computers sometimes wonder the powerfulness of the keyboard. Even some computer professionals who have examined the internal parts of the keyboard do not understand how it works so powerful. To clarify how the keyboard works, the free web encyclopedia gave the following.

When a key is pressed, it pushes down on a rubber dome sitting beneath the key. A conductive contact on the underside of the dome touches (and hence connects) a pair of conductive lines on the circuit below. This bridges the gap between them and allows electric current to flow (the open circuit is closed). A scanning signal is emitted by the chip along the pairs of lines in the matrix circuit which connects to all the keys. When the signal in one pair becomes different, the chip generates a "make code" corresponding to the key connected to that pair of lines. Keycaps are also required for most types of keyboards; while modern keycaps are typically surface-marked, they can also be two-shot moulded, or engraved, or they can be made of transparent material with printed paper inserts. (Wikipedia, 2008) Typewriting involves the manipulation of keys on a standard typewriting keyboard with the emphasis on the typed copy or output. The output is produced on paper at the same time as the input is provided. With the advent of personal computers, typewriters began to become extinct. In fact, electric typewriters are no longer made in the United States. Electronic typewriters had an era of influence in the 1980s which is also gradually decreasing, and virtually all input on a keyboard-like device in today's world is on a computer. The one remaining aspect is that the computer keyboard is almost the same as the typewriter keyboard. In fact, the placement of the letters of the alphabet, commonly used punctuation marks, numbers, and symbols is almost exactly the same as the placement on the typewriter keyboard. Thus, the skill of inputting, or keyboarding, on the typewriter is very similar to the skill of inputting, or keyboarding, on a computer. Typewriting also included the production of documents including memos, letters, reports, essays, etc. Nowadays the production of those documents is done with some kind of a word processing program, but formatting, appropriate use of grammar, spelling, and punctuation, etc. are the same as when documents were produced on typewriters. The difference is that word processing packages are easier than typewriters to use to produce documents (Bartholome, 2002).

Bartholome actually made it clear in his document that with the advent of computer and its easy typing keyboard, typewriters are no more manufactured in United State. From this analogy, one can see that it is worth assisting students in the senior high schools, Colleges of Education, etc, to acquire skills in the use of the computer keyboard. It is hoped that when students acquire skills in keyboarding it will go a long way to enhance their use of the computer particularly, during ICT lessons at the computer laboratory.

Bartholome (2002) also defined keyboarding as 'the act of placing information into various types of equipment through use of a typewriter-like keyboard. Keyboarding produces copy which appears on a display screen and is recorded and stored in memory for later access or output'.

It can readily be seen that children of all ages, from elementary school upward, are using personal computers. However, are these students learning to input data efficiently? Sandberg-Diment (1984) says that "whether you are a business tycoon or a baker, you can't compute like a pro until you master typing." People who used to find "hunt and peck" keyboarding sufficient realize that it doesn't make much sense to have a computer with lightning speed if the information inputted into the machine trickles in like molasses in January. In fact, Sandberg-Diment states that keyboarding is "the most crucial computing skill." It appears that keyboarding instruction in the elementary schools is very sporadic. In many instances, instruction is provided by someone who is in charge of the computer laboratory who does not understand teaching and learning. Some states, such as Wisconsin, require certificates to teach keyboarding. Some district personnel do an excellent job in teaching keyboarding at the elementary school level (Bartholome, 2002).

Typing is the process of inputting text into a device, such as a typewriter, cell phone, computer, or a calculator, by pressing keys on a keyboard. It can be distinguished from other means of input, such as the use of pointing devices like the computer mouse, and text input via speech recognition. (Wikipedia, 2009) http://www.mediawiki.org/

Many people see typing as a vocation and as such do not show interest in it since they are of the view that it is reserved for those who are academically weak. In Ghana, technical and vocational courses are not valued like the science and liberal courses. Typists in offices are mostly females who did not get the opportunity to attain higher educational status. Thus, typing jobs are not considered lucrative in Ghana. The general question which is in people's mind is "has typing and keyboarding any influence on academic performance?"

According to Nadine Bunnell (undated) 'keyboarding enhances all other communication skills!' He further elaborated this assertion as follows:

Not only can elementary students learn to type, but those who do type improve their language arts skills (Wood & Freeman, 1931; Erickson, 1959).

- Keyboarding facilitates skill development in writing, spelling and grammar.
- Students who can keyboard are not only faster but also more imaginative. They are free to think about composing text or copying material rather than constantly trying to find their place. (Erickson, 1959)
  Students who key correctly:
➢ Demonstrate improved language arts skills.
➢ Can compose faster,
➢ Produce documents with a neater appearance, and
➢ Have higher self-esteem."

- In just three short months of keyboarding twice a week, a teacher in the Salt Lake City elementary schools noticed benefits. She reported that 'the kids are more careful about the beginnings and endings of their sentences.'
- They recognize structure better and pay more attention to details." In addition, she found that the keyboarding program instilled her students with confidence in using a micro-computer (Salt Lake Tribune, 1983).

In complement with the above literature, one keyboarding and typing researchers also expressed that the reason is simple. Most students want to be able to use a typewriter or computer keyboard. At the same time, most students who may happen to have a reading or spelling problem do not want to admit it. Fear of being looked down upon as being a remedial student may prevent them from taking a keyboard course if their book were to be entitled, Improving Reading/Spelling Skills via Keyboarding. (McCabe, 1990) Keyboarding is a cumulative skill – what can be effectively learned at one level depends heavily upon what has been learned earlier. If hunt 'n' peck habits become ingrained, it becomes much more difficult to develop a competent keyboarding skill. You need that basic foundation early on (Goble, 2002). Viewing keyboarding as cumulative skill implies that teachers and students in typing and keyboarding must teach and learn the typing skills from known to unknown in a gradual process with practical exercises at the core.

According to Miskell (undated) keyboarding skills (touch typing) is an automatic or sub-conscious skill, where all ten fingers are used. It enables fast and accurate entry of characters onto the computer screen, without looking down at the keyboard and without searching for keys. Miskell further gave the following as the reasons why keyboarding is so important.

- Studies have shown that students who can touch type learn other desktop applications 40% faster.
- Increases confidence in software use.
- Reduces the time spent at PCs.
- Requirement in today's digital age - assignments are submitted by email and 90% of business documents are electronic.
- It means ideas can be recorded at 3-5 times the rate of handwriting.
- Students learn a life-long skill.

1.1.2. Mastery Technique Levels are
- Mastery (M) – The student knows the keys and keys by touch.
- Near Mastery (N) – With more practice, the student will key by touch.
- Partial Mastery (P) – The student looks at the keys most of the time.
- Minimal Mastery (L) – The student is dependent on looking at the keys.

Deliberating on the right technique and approach to use to guide students develop speed and accuracy in typing, one author gave the following guidelines for typing tutors.

The approaches to use are direct instruction and supervision will ensure the development of excellent keyboarding and mouse skills. The primary focus is proper keyboarding technique with appropriate speed. When this has become automated, emphasis will be placed on accuracy. Direct instruction has proven to be the most effective way to introduce the keyboard and teach correct techniques. The use of computer software to teach keyboarding must be carefully scrutinized. The software cannot check whether students are using correct fingers on the keys. In the initial stages of keyboarding, students may be faster when using one or two fingers. But their speed has limited potential (Goble, 2002). Some typing techniques which are commonly demonstrated among typists are as follows:

1.1.3. Touch Typing
The basic technique stands in contrast to search and peck typing as the typists keep their eyes on the source copy at all times. Touch typing also involves the use of the home row method, where typists keep their wrists up, rather than resting them on a desk or keyboard as this can cause carpal tunnel syndrome. To avoid this, typists using this method should sit up tall leaning slightly forward from the waist, place their feet flat on the floor in front of them with one foot slightly in front of the other, keeping their elbows close to their sides with their forearms slanted slightly upward to the keyboard, fingers should be curved slightly resting on the home row (asdfjkl;). Many touch typists also use keyboard shortcuts or hotkeys when typing on a computer.

1.1.4. Search and Peck
Search and peck (two-fingered typing) is a common form of typing, in which the typist must find and press each key individually. This is almost always considerably slower than touch typing. Instead of relying on the memorized position of keys, the typist must find each key by sight. Use of this method may also prevent the typist from being able to see what has been typed without glancing away from the keys. Although good accuracy may be achieved, any typing errors that are made may not be noticed immediately, if at all. There is also the disadvantage that because fewer fingers are used, they are forced to move a much greater distance.

1.1.5. Buffering
Some people use a combination of "touch typing" and "Search and peck" by using a buffering method. In the buffer method, the typist looks at the source copy, stores one or many sentences in his or her head, then looks at the keyboard and types out the buffer of sentences. Doing this allows the typist to eliminate frequent up and down motions with the head.

1.1.6. Thumbing

A rather new trend in typing, principally used with devices such as PDAs with built-in keyboards, is thumbing or thumb typing. This can be accomplished using one or both thumbs. Similar to desktop keyboards and input devices, if a user overuses keys which need hard presses or/and have small and unergonomic layouts, it could cause thumb tendonitis or other repetitive strain injury (Wikipedia, 2009)

One of the very important aspects of typing is the speed which is measured in words per minute. According to Wikipedia (2009), 'words per minute (WPM) is a measure of typing speed, commonly used in recruitment. For the purposes of WPM measurement, a word is standardized to five characters or keystrokes. Therefore, "fifth" counts as one word, but "fifteenth" counts as two'. The online encyclopaedia also stated that 'the benefits of a standardized measurement of input speed are that it enables comparison across language and hardware boundaries.

In developing the typing speed and accuracy, there is one factor which cannot be uncared for. This has to do with the main typing keys which are alphanumeric and numeric entry keys. Usually the speed of alphanumeric entries is expected to far outweigh that of numeric entries. This imbalance has been observed from many computer users who use to say that typing mathematical documents is very difficult compared to typing alphanumeric which is alphabets dominated. The researchers noticed that the price of typing mathematical scripts is higher than typing ordinary text at the case study school.

Typing as a profession has its own down side. The use of any keyboard may cause serious injury (that is, carpal tunnel syndrome or other repetitive strain injury) to hands, wrists, arms, neck or back. The risks of injuries can be reduced by taking frequent short breaks to get up and walk around a couple of times every hour. As well, users should vary tasks throughout the day, to avoid overuse of the hands and wrists.

The foregoing literature point to the fact that when students are guided through the right techniques of typing there is the possibility that their speed and accuracy in typing could be developed. Notwithstanding, factors that could bring fatigue and ailments must be controlled in the typing classroom or pool.

1.2. Empirical Basis of the Study

1.2.1. Activity Method

In this method of teaching, the students are engaged in activities during the lesson. The initiative on which this method is based is that children learn best by doing and find interest and satisfaction in the activity. For just as the child learns to walk by walking so does, he in his mental activities learn to read by reading and to count by counting and to type by doing typing. Activity method appeals to many of the child's senses. Activity method is good when teaching skills as reading, drawing, dancing, typing and singing. Sometimes a whole lesson or series of lessons may be taught almost entirely as activity lesson. Practice and practical lessons fall under this.
They include Demonstration and Drill and Practice.

Demonstration: It consists of showing the learner how a new skill should be performed. This performance should be done by the teacher while the students observe. The learner views a reality or a life like example of a skill or procedures; it can be executed by the learner or the teacher. They can also be delivered by the media such as video, film and audio cassette player if the skills to practise are verbal. Here the learner observes the behaviour exhibited by the teacher or the instruction media, and then they ask questions for clarification. Then they imitate by practising the behaviour as it was done by the teacher or the media. They receive feedback, make corrections, then practise again.

Demonstration is effective in the teaching of psychomotor skills, affective and some skills (application) under cognitive.

In conclusion, we are upholding that keyboarding skills (typing speed, skills) can best be developed when the right technique and method is used to help the learner to develop the right attitude and skills towards keyboarding and mouse skills.

3. Methodology

3.1. Research Design

This research is qualitative in nature and also based on an Action Research design to identify and investigate into a classroom problem after which measures and strategies were devised to improve upon the situation. Action research therefore involves trying out an idea in a practice with the view to enhancing or changing something and trying to have a real effect on the situation at stake (kemmis, 1988).

In achieving the above, thorough consideration of the nature of the study was made and the researchers used cross-sectional mechanisms to provide answers to the research main questions.

3.2. Population and Sampling

The study was conducted on the six classes of Diploma in Basic Education (DBE) of year One at St Joseph's College of Education, Bechem. In all there were two hundred and seventy-six students in the six DBE One classrooms in the school and all of them were expected to take ICT subject and were supposed to do typing.

3.3. Sampling Technique

A simple random sampling technique was employed to arrive at a sample size of two hundred and seventy-six students. Here a purposive technique was used to select DBE 1A class. This technique was chosen in order to have direct contact with respondents. Also, to meet the large number of respondents within a relative short time and again to make the whole process very flexible.

3.4. Data Collection Instrument

The research approach was qualitative in nature which focused on questionnaires and interviews with individuals, stakeholders of the case study school (St Joseph's College of Education, Bechem.) that were used to supplement data from reliable literature.

Also published articles, policy documents on the ICT education and other relevant documents were examined and analyzed. Both primary and secondary sources of information were used for the study. The primary data consisted of mainly the administration of structured questionnaire, direct interviews, observation, class exercises and discussions (group and one-on one). The questionnaires were used to assess the capacity of students with regards to basic requirements for ICT instructions at the Senior High School level, College of Education, etc. The other methods were employed at both pre-testing, implementation and post-testing periods.

3.5. Intervention Design and Implementation

The introduction of the intervention and its implementation within the research process is a major activity that makes action research unique from the other types of research. Action research in this case is not only a problem finding research, because it goes further to also concern itself with solving the problem identified in a particular context.

3.6. Intervention Design

The intervention design was informed by the customers from the capacity assessment conducted. After a thorough study of the program using both primary and secondary data gathered on the field (i.e. DBE one students of St Joseph's College of Education, Bechem). We introduced intervention strategies that would bring out the best out of the students under the circumstance they found themselves. The intervention design was grouped into pre-intervention and post-intervention phases.

3.7. Pre-Intervention Design

Having understood the capacity and the background of the students through the responses from the questionnaires, students' exercise books, personal observations, group discussions and interviews, a series of meetings were held between the students and the researchers on issues concerning the feedback on their background assessment in typing.

Students were made aware of the capacity requirement, the gabs identified and the significance of the study of their academic success and hence the need for their co-operation in bridging the gaps in a participatory manner. They were briefed about the benefits they would derive from the study if they co-operate fully with the researchers.Also, contacts were made with other Information Technology Students who are on internship in other schools in the country. Furthermore, many personalities both in the public and the private sectors have been identified as being successful in life due to the study of ICT. Prominent ICT practitioners were mentioned to serve as a role-model to students. Students were made aware that you could not be good in most ICT courses without being good on the keyboard and mouse.

Also, the students were made to understand that they were not the only students facing the recent challenges. Those who felt isolated, neglected and discouraged were identified, and carefully encouraged to sit up. Students who had special problems like financial and other domestic problems were also discovered and advised accordingly. The above-mentioned measures were implemented to enable the researchers prepare the minds of the students for an effective and efficient implementation of the intervention design.

3.8. Intervention Design

The following participatory methods of teaching were employed to help students improve upon keyboarding and mouse skills (typing speed and skills) thereby improving their performances in the study of ICT:
- Demonstration
- The use of software (Mavis Beacon)

3.9. Demonstration Method

To enable students, participate fully during lessons and receive feedback immediately, we made use of demonstration and practice method of teaching during practical lessons such as typing. Students demonstrated their skills and abilities when they were given the chance to perform. The researchers performed skills for students to observe after which students were given the chance to follow the researchers' steps to do the same.

3.10. The Use of Software (Mavis Beacon)

The use of this particular software (Mavis Beacon) did almost 60% of the work. It helped students to learn typing at their free time with or without the help of the teacher. After the initial introduction to the Mavis Beacon Software students were able to use the software to learn on their own.

3.11. Implementation

3.11.1. Demonstration Method

The researchers regularly demonstrated procedures, methods and ways of solving and answering ICT questions to students. Students were then given the opportunity to practise the concept taught. Students were given the opportunity to demonstrate to their follow students and this helped the students to learn the typing and developed their skills and their speed.

3.11.2. The Use of Software (Mavis Beacon)

The use software (Mavis Beacon) to teach typing made learning of typing easier because it is a step by step method of teaching typing. First the left fingers were trained with the letters (a, s, d, f) after which the right fingers were trained with the letters (j, k, l, ;) and so on. Intermittently, games which helped one to develop his or her typing speed were introduced to reduce boredom, students thought they were playing games but learnt without being aware that they were learning. Using this, students were able to learn without the help of the teacher. This method proved to be very effective because the software combined the demonstration method in teaching the typing. Students were shown what to do at each stage of the typing.

3.11.3. Data Analysis

The primary data gathered through the desk top study coupled with the various responses and observations from the aforementioned activity-based research methods were analyzed accordingly; the data collected were organized by the use of figures and frequency for purposes of presenting data in both qualitative and quantitative forms as an explanation of issues concerning the capacity of first year students to continue with the Information and Communication Technology (ICT) component of the new syllables under the new education reforms. It involved a process of comparing pieces of data and identifying similarities and differences between them for generating patterns or categories from the data. Comparison allowed the researchers to establish the range of categories grounded in the data and the variation within them.

Moreover, the pre-intervention data was compared with post-intervention designed in order to estimate the contribution of the action research.

4. Results and Discussion

This section unveils the discussion and interpretation of the result of the study. These results are based on the data gathered through observations, interviews and questionnaires administered to the respondents in the school. The main technique used in analyzing the result was percentages and presented using pie chart. This technique was adopted because it was simple and very easy to understand.

4.1. Pre-Intervention Result

The pre-intervention activities assisted the researchers to gather the data they would require in their effort to help students to improve their skills and speed.

4.2. Research Questions
- Is keyboarding so essential to the learning of ICT?

Response	No of Students	Percentage (%)
Yes	12	11
No	96	89
Total	108	100

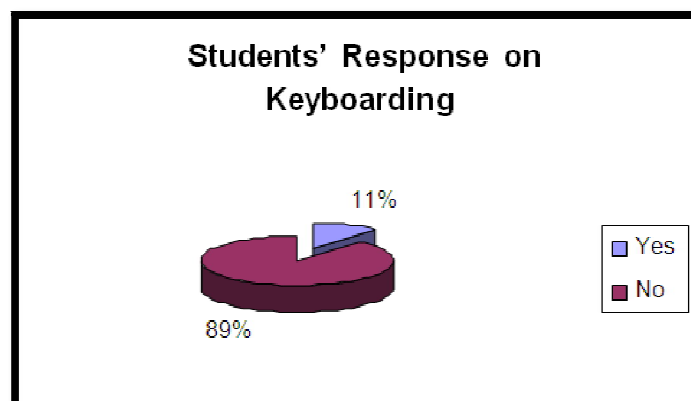*Table 1: Students' Response to the Use of Keyboarding for Learning ICT*

*Figure 1: Students' Response to the Use of
Keyboarding For Learning ICT*

From table 1 and figure 1, out of 108 students who answered the questionnaire, 12 of them representing 11% indicated that to do any IT related course one must be good on the keyboard and mouse while majority representing 89% said you could do the course even if you are not good in typing.

- Will typing software help you improve your typing skills?

Response	No of Students	Percentage (%)
Yes	18	17
No	90	83
Total	108	100

Table 2: Students' Response on Typing Software
Improvement of Typing Skills
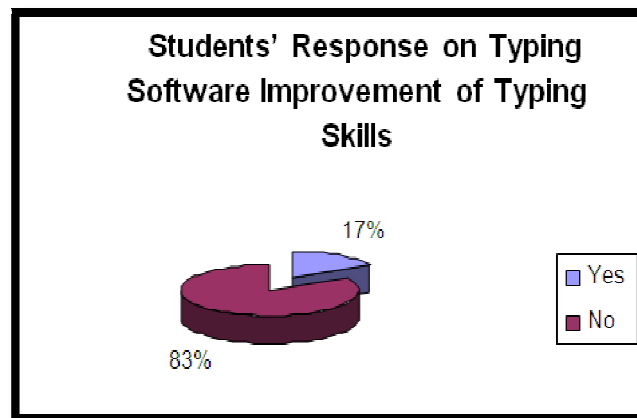
Figure 2: Students' Response on Typing Software
Improvement of Typing Skills

From the table 2 and figure 2, out of 108 students, only 18 of them representing 17% indicated their typing skills could be improved using typing software, the rest representing 83% said they had no idea on how the typing software cold help them.

- Would demonstration method of teaching help to stimulate typing and mouse skills?

Response	No of Students	Percentage (%)
Yes	20	19
No	88	81
Total	108	100

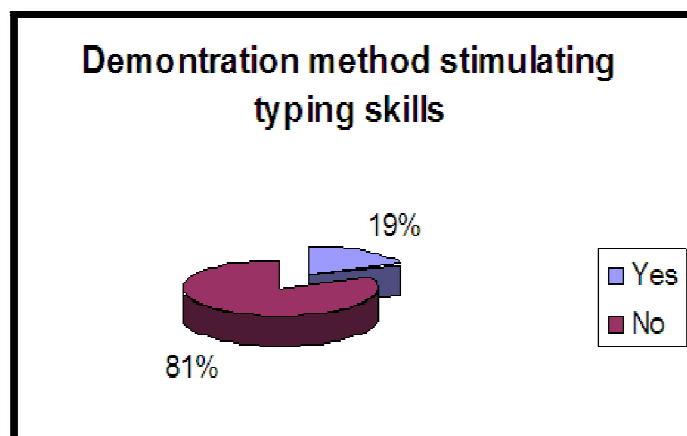*Table 3: Demonstration Method Stimulating Typing Skills*

Figure 3: Demonstration Method Stimulating Typing Skills

From the table3 and the figure 3, 20 students representing 19% indicated if the researchers demonstrated for them to observe, it would go long away to help them while majority of them representing 81% of the students did not believe how that could happen.

- Would typing software and demonstration help stimulate students in typing?

Response	No of Students	Percentage (%)
Yes	30	28
No	78	72
Total	108	100

Table 4: Students' Response on Software and
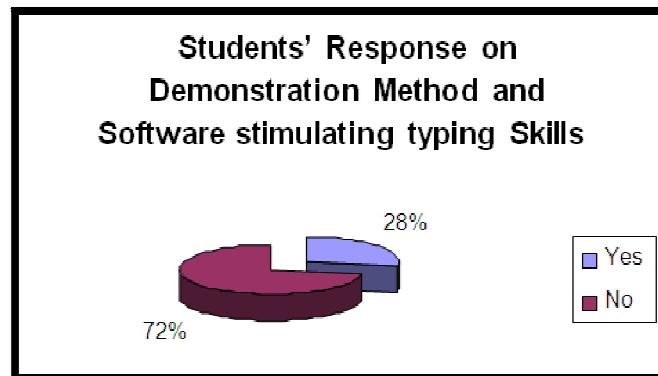*Demonstration Stimulating Typing*

Figure 4: Students' Response on Software and
Demonstration Stimulating Typing

From the table 4 and figure 4, 30 students representing 28% indicated when software and demonstrations were put together, they would help them develop their skills well but 78 students representing 72% of the total students indicated that they did not know how that could happen.
- Can you type 10 words in a minute?

Response	No of Students	Percentage (%)
Yes	8	7
No	100	93
Total	108	100

Table 5: Students' Response to Words they
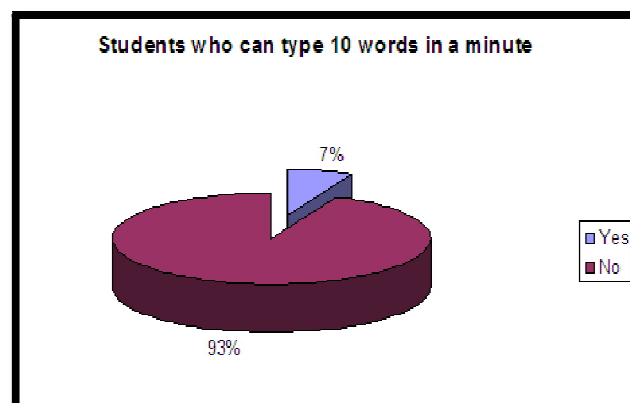*Could Type In a Minute*

Figure 5: Students 'Response to Words They
Could Type In a Minute

From the table 5 and figure5, only 7% representing 8 students admitted they could type 10 words in minute and 93% representing 100 students admitted they could not type such words in a minute.

4.3. Capacity Assessment
In order to understand the gravity of the problem under study, a capacity assessment was affected on the sampled students. This was done in the light of the standards required by the Information and Communication Technology syllabus for Colleges of Education.
The assessment was administered on the students' ability to demonstrate basic requirement of the syllabus of the Information and Communication Technology.
These basic skills include:
- Keyboarding skills

4.4. Practical Assessment

The sampled population was divided into 10 groups and subjected to practical assessment to lend credence to the feedback from the response to the questionnaires.

To our uttermost amazement, the distinction between the two results was very small thereby reinforcing the earlier results.

The above results informed both pre-intervention designs.

4.5. Post Intervention Result

Below is the analysis of the results of the post-test questionnaires administered on the sampled students.

1 Is keyboarding so essential to the learning of ICT?

Response	No of Students	Percentage (%)
Yes	96	89
No	12	11
Total	108	100

Table 6: Students' Response to the Use of
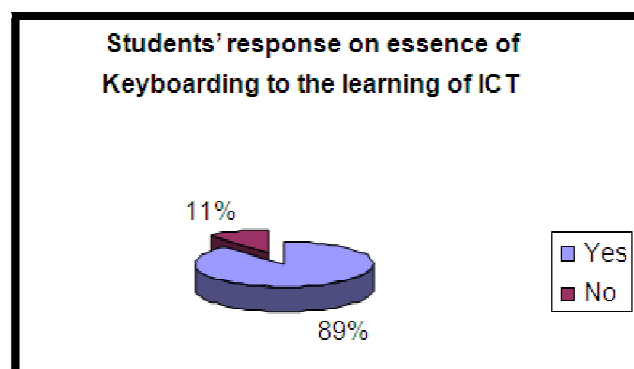*Keyboarding for Learning ICT*

Figure 6: Students' Response to the Use of
Keyboarding for Learning ICT

From table 6 and figure 6, majority of the students representing 89% admitted that keyboarding skills was very vital for learning ICT course but 11% did not change saying keyboarding skills was not so essential to the learning of ICT.

- Has the typing software enabled you improve your typing skills?

Response	No of Students	Percentage (%)
Yes	92	85
No	16	15
Total	108	100

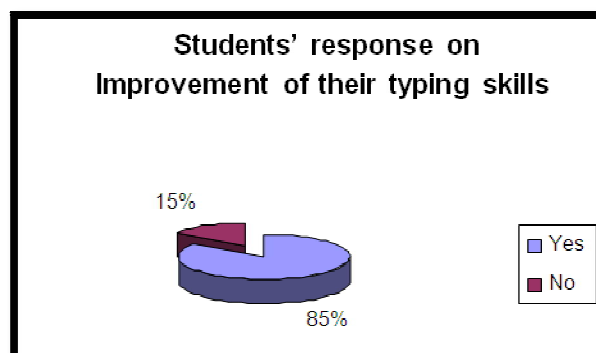*Table 7: Students' Response on Improvement of Typing Skills*

Figure 7: Students' Response on Improvement of
Typing Skills

From table 7 and figure 7, 85% of the students admitted that typing software could help them enrich their typing skills while 15% disagreed to accept that their typing skills did not improve after all the interventions.

- Would demonstration method be of help to stimulate typing skills?

Response	No of Students	Percentage (%)
Yes	89	82
No	19	18
Total	108	100

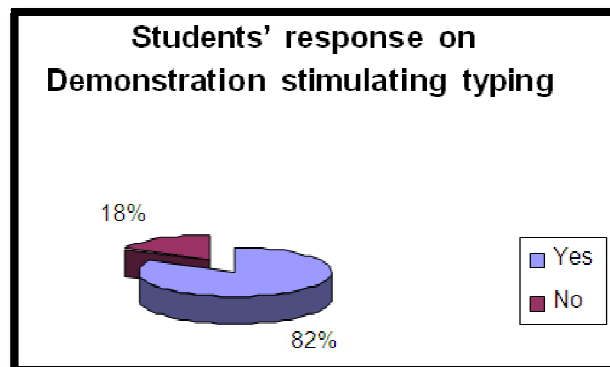*Table 8: Demonstration Method Stimulating Typing Skills*

*Figure 8: Demonstration Method
Stimulating Typing Skills*

From table 8 and figure 8, 82% said demonstration by the researchers motivated them, developed their skills while 18% indicated that even though the researchers did everything to help them it was not enough to enrich their skills.

- Have typing software and demonstration helped stimulate your typing?

Response	No of Students	Percentage (%)
Yes	98	91
No	10	9
Total	108	100

*Table 9: Students' Response on Software and
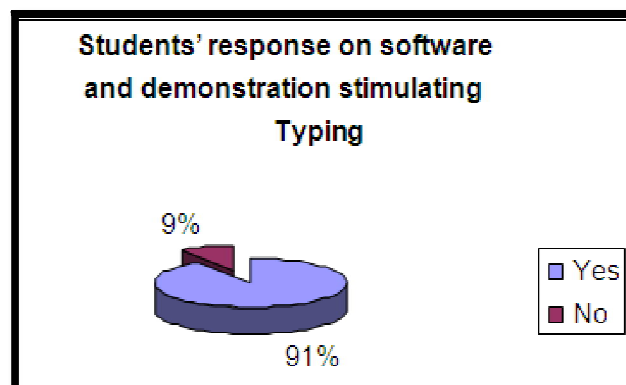Demonstration Stimulating Typing*

*Figure 9: Students' Response on Software and
Demonstration Stimulating Typing*

From table 9 and figure 9, 91% of the students admitted when software for typing and demonstration method was combined, it enhanced their skills appreciably but 9% indicated they did not improve in any away.

Response	No of Students	Percentage (%)
Yes	100	93
No	8	7
Total	108	100

*Table 10: Is Your Typing Speed Greater Than 10 Words In A Minute?
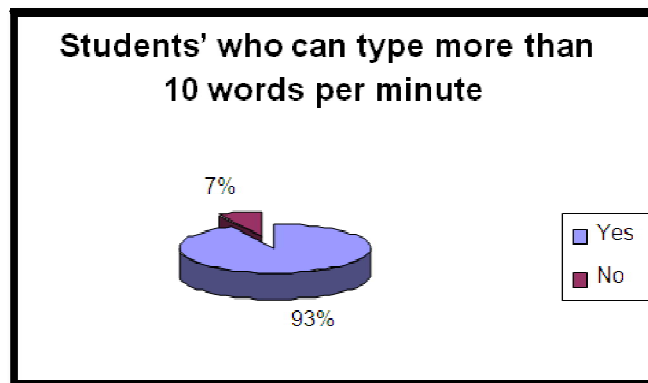Students' Response on Their Typing Speed*

Figure 10: Typing Speed of Students

From table 10 and figure 10, 93% of the students admitted they could now type more than 10 words per minute but seven could still not type 10 words per a minute.

5. Discussion of Post-Intervention Result

When you compare the results from the pre-intervention and the post-intervention, it could be seen that the attitude and performance changed significantly due to adherence to the intervention put in place by the researchers. The number of students who indicated earlier that keyboarding and mousse skills were not so essential to the course of ICT came to appreciate that keyboarding skills were paramount in learning most ICT courses, the number escalated from 12 students to 96 students.

The number of students who were not convinced that typing software could help them enrich their typing skills rose from 18 students to 90 students.

Only 20 students admitted that demonstration method could help them shape their typing skills but rose to 89 students. Students who said the combination of typing software and demonstration method could assist them to overcome their short coming in typing rose from 30 students to 98 students. Students who could not type 10 words in a minute appreciated from 7% to 91%. 90% of the students developed the skills of typing faster and could even type 25 to 30 words per minute. All these were made possible because the researchers used Mavis Beacon software and demonstration method of teaching. Students were encouraged to do more to get to the objectives set since the researchers demonstrated every skill; they wanted the students to acquire.

6. Conclusion

In the researchers' effort to enhance teaching and learning of ICT in the first year of College of Education students who have not had previous instructions on the basic concepts of ICT, the study has focused on three principal issues. That is, (i) understanding the background of students with the capacity requirement of the ICT syllabus for Colleges of Education (ii) preparing the minds of students to understand the challenges ahead in bridging the gaps and (iii) collectively implementing various interventions aimed at addressing the challenges. The capacity assessment was done with the context of the syllabus for College of Education.

7. Recommendation

Having realised that finding sustainable solution to challenges is a process, one must not lose sight of the fact that interventions used in this action research are not exclusive in solving the problem at stake; the following are recommended and outlined for the future.

- We wish to recommend that variety of teaching methods must be made use of in teaching and learning of typing, more participatory methods like group work and demonstration must be used interchangeably in the delivery of lessons instead of the traditional, passive and other methods of teaching which are found to be ineffective. Conscious efforts should be made to motivate students in the study of typing to help them to develop their skills.
- By and large, teachers must give more assignments to engage students all the time so that the skills acquired will be put into good use thereby polishing it up.
- The school authorities should do well to provide the school with adequate facilities that will help students get the adequate facilities needed to upgrade their skills.

Given the fact that most schools lack adequate facilities to enhance the teaching of ICT education, the resource centre concepts should be revisited so that such centres will cater for deprived schools. It is also recommended that zonal in-service training programmes be organised for teachers to upgrade their knowledge and be abreast with current trends in the ICT education. This will provide teachers the stage to share experience in the field.

4. Teachers must be encouraged to join subject associations to enable them discover new ways of teaching the subject especially teaching typing which is the basis for all ICT courses.

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