

## **ASSISTIVE TECHNOLOGY SKILL NEEDS OF BUSINESS EDUCATION LECTURERS FOR EFFECTIVE TEACHING AND LEARNING OF IMPAIRED BUSINESS EDUCATION STUDENTS IN FEDERAL UNIVERSITIES IN SOUTH EAST, NIGERIA**

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### **Abstract**

The study determined the assistive technology skill needs of business education lecturers for effective teaching and learning of impaired business education students in federal universities in South East, Nigeria. Three purposes and three research questions guided the study. The study adopted a descriptive survey design and was carried out in federal universities in South East consisting of five universities. The universities are University of Nigeria, Nsukka, Enugu State; Alex Ekweme University, Ndufu-Alike, Ebonyi State; Michael Okpara University, Umudike, Abia, State; Federal University of Technology, Owerri, Imo State, and Nnamdi Azikiwe University Awka, Anambra State. The population comprised was 110 lecturers in federal Universities in South East, Nigeria. The instrument for data collection was a researcher designed questionnaire titled: “Assistive Technology Skills Needs Questionnaire” (ATSNQ). The instrument was face validated. The reliability of the instrument was established using Cronbach Alpha ( $\sigma$ ). The reliability coefficient was 0.94. The statistical tools for data analysis were mean and improvement Need Index (INI). It was discovered that business education lecturers do not possess the 21<sup>st</sup> century assistive technology skills needed in planning teaching instruction for impaired business education students in South East, Nigeria. It was also discovered that business education lecturers do not possess the 21st-century assistive technology skills needed in instructional delivery for impaired business education students in South East, Nigeria and many more. It was concluded that curriculum planners should incorporate special curriculum implementation methods for business education students with disabilities that cover the use of assistive technology. Secondly, the scheme of work for business education students should be reviewed and lecturers and other graduates' knowledge on the use of assistive technology be updated so as to ensure that business education impaired students will not be left out in the teaching and learning process.

**Keywords:** Assistive Technology, Business Education, Business Education Lecturers.

### **Introduction**

One of the occupational areas that are richly provided by Vocational and Technical Education in Nigeria is Business Education. Undie and Umoh, (2014) defined Business Education as education for and about business. A more comprehensive definition is the one put forward by Okoye and Ashibogwu (2018) who defined Business education as that aspect of educational training which an individual receives with the primary motive of enabling him to acquire adequate attitudes, concepts, knowledge, understanding and skills in business activities for vocational usage in careers as an administrator, manager or teacher wherever he may find himself in the business world. This shows that business education is for everyone whether

disabled or not. The definition above is adopted as it pointed out that Business Education is an educational training, therefore it involves teaching and learning with different tools including assistive technology by Business Education lecturers. According to Agbo, Ugwoke and Edeh (2019), a business education lecturer is a person who has gotten an academic qualification in subjects associated with business from the universities and teaches business-related subjects in institutions of higher learning. Agbo and Okanazu (2022) defined business education lecturer as any person who plays a very important role in making business education viable and visible in the society, acts as an agent of change in business education, delivers high-quality Business Education programmes that equip students with innovative skills for self-reliance on graduation, and he that is able to identify problems facing learning and teaching in Business Education subjects, and is able to suggest solutions to these challenges. One of the responsibilities of Business Education lecturers is to ensure that every student under their care receives good education whether disabled or not thereby making it imperative that business education lecturers possess assistive technology skills in teaching and learning process of people with disability.

Disability or impairment is neither purely a biological nor a social construct but the result of interactions between health conditions and environmental and personal factors (World Health Organisation (WHO), 2001). According to WHO (2013), disability can occur at three levels: impairment in body function or structure; a limitation in activity, such as the inability to read or move around; a restriction in participation, such as exclusion from school or work. As such, people with disabilities include those who are traditionally understood as disabled (for example wheelchair users, people who are blind or deaf or people with intellectual impairments), and people who experience difficulties in functioning due to a wide range of health conditions such as chronic diseases, severe mental disorders, multiple sclerosis and old age. These set of people can still contribute to the society and chase their dream goals which includes education hence, technology has made it easier for them by developing Assistive Technology (AT).

Assistive Technology (AT) can be anything that helps a student with a disability perform a task that he or she otherwise would not be able to perform or to increase the efficiency with which the task is performed (Coleman as cited in Omer & Kursat, 2012). For effective use of AT by students in teaching and learning, there is need for business education lecturers to possess the skills of using these AT so as to incorporate the students with impairment in planning of the lesson, assist the students during teaching and learning process and also during evaluation.

### **Assistive Technology Skill Needs for Lesson Planning**

In this 21<sup>st</sup> Century there is an urgent need for business education lectures to equip themselves with trends and innovative skills in order to be more relevant in a globalised society. As such, this study pointed out the needed skills by business education lecturers to enable them plan and prepare for classes that involves people or a person with disability. The reason for this, is because every student is important and requires to be carried along during teaching and learning process. This means that business education lecturers are meant to bear impaired students in mind while preparing for a lesson (Abubakar, 2023). In the same vein, UWA (2019) a good teacher puts in mind the how to improve the motor skills, improve mobility, organization skill development, to mention but a few while preparing for a class with a student of disability and assistive technology. Such classes are considered from class brightness, sound and aiding group instruction and sharing during lesson plans. Maza (2022) also emphasised that in planning a teaching and learning experience with students with disability, a lecturer has to possess the skill to plan classes with standing desks, exercise balls and others.

### **Assistive Technology Skills Needs for Teaching and Learning**

In teaching impaired students, there are a lot of skills a lecturer should possess in order to effectively teach and guide the students during the class (Abubakar, 2023). The author further expressed that the business education lecturers need to possess the skills in order to efficiently and effectively conduct a good instructional class with students with disability. Ability to use pencil grips, modified paper, timer, graphic organizer, checklists, electronic wheelchairs, alternative keyboards, voice recognition software and others. The author further abstained that lecturers who do not have such skills will find it difficult to carry the disabled students along in their classes. Smith, Harkema and Chapel (2023) posited that assistive technology skills is not only on the use of digital technology hardware also software. In the opinion of the author, assistive technology is any device, software, or piece of equipment that helps a person with disabilities to communicate, function, or learn more easily. This means that business education lecturers needed to possess such skills on the use and functionality of some assistive software for better class control and learning outcome.

### **Assistive Technology Skills Needs for Evaluation**

The ability of business education lecturers to use assistive technology or set questionnaire that can be answered using assistive technology is a crucial skill for every business educator. These ranges from setting questions in a way that supports the use of assistive technology in both written, spoken and other forms of communication to ensuring that students with disability partakes in the evaluation processes. According to Abubakar (2023), the skill that needs to be possessed by business education lecturers are the ability to set questions students can reply using pencil grips, ability to set questions that amputee students can write without much stress and others. The Guide provides the key principles to consider when adopting an inclusive approach to designing and implementing learning and ensuring that teaching materials and methodologies are accessible and effective for all children, while maximizing participation opportunities for children using individual assistive technologies. As such there is need for integration of information and communication technology for effective and efficient instructions.

Information and Communication Technology (ICT) has become a very important part of the educational planning, delivery and evaluation processes and to great extent facilitates the acquisition and absorption of knowledge, and therefore can provide extraordinary opportunities to developing countries for enhancing their educational systems particularly for children with special needs. To really achieve these policies, the use of ICT by children with special needs in South East Nigeria has become imperative. With these, the adoption and use of Assistive Technology (AT) has become popular and required attention of families and business education lecturers as a result of its potential for improving the lives of children with learning disabilities in South East Nigeria. Right from the global embrace of computers, communication devices to environmental controls; the use of technology present many children with disabilities the necessary tools to be more successful in school, at work, and at achieving independence in daily living. Certainly, opportunities now abound nowadays to some children with disabilities with the support of new and emerging technology, raising new hopes, which had in the past unavailable.

Sadly, most Business Education lecturers are those trained during the paper and pencil time. In those days when typewriter is one of the highest technological devices for office use and classroom practical teaching and learning. There is likelihood that most of these lecturers have not updated their skills to the 21<sup>st</sup> century skills used in teaching and learning of impaired

business education students hence, this research work tends to determine the assistive technology skill needs of business education lecturers for effective teaching and learning of impaired business education students in 21<sup>st</sup> century in federal universities in South East, Nigeria.

The general purpose of the study was to determine assistive technology skill needs of business education lecturers for effective teaching and learning of impaired business education students in federal universities in South East, Nigeria. Specifically, the study sought to determine the assistive technology skill needs in:

1. Instructional planning by business education lecturers for effective teaching and learning of impaired business education students in federal universities in South – East, Nigeria.
2. Teaching and learning by business education lecturers for effective teaching and learning of impaired business education students in federal universities in South – East, Nigeria.
3. Student evaluation by business education lecturers for effective teaching and learning of impaired business education students in federal universities in South – East, Nigeria.

### **Research Question**

1. What are the assistive technology skills needs of business education lecturers in instructional planning for effective teaching and learning of impaired business education students in federal universities in South East, Nigeria?
2. What are the assistive technology skills needs of business education lecturers in teaching and learning for effective teaching and learning of impaired business education students in federal universities in South East, Nigeria?
3. What are the assistive technology skills needs of business education lecturers in evaluation for effective teaching and learning of impaired business education students in federal universities in South East, Nigeria?

### **Methodology**

The study adopted a descriptive survey research design. Descriptive survey research design was considered suitable for this study as a design that solicits for information from a few people as a representation of the entire group. In this case, the study solicited information from business education lecturers. The study sought to determine the assistive technology skill needs of Business Education lecturers in federal universities in South East, Nigeria. The study was carried out in federal universities in South East consisting of five public universities. The population is 110 comprising of 27 lecturers in University of Nigeria, Nsukka; 23 lecturers from Nnamdi Azikiwe University Awka, 25 lecturers from Michael Okpara University, Umudike, 18 lecturers from Federal University of Technology, Owerri, Imo State and 17 lecturers from Alex Ekweme University, Ndufu-Alike, Ebonyi state.

The instrument for data collection was a researcher designed questionnaire titled: “Assistive Technology Skills Needs Questionnaire” (ATSNQ). The ATSNQ was structured by the researcher based on literature review and specific objectives of the study. The ATSNQ consisted of Part 1 and Part 2. The Part 2 sort information on the level of importance and level of possession of assistive technology and elicited responses based on the research question in three (3) clusters A – C. Cluster A consisted of 8 items which was designed to seek answers on the assistive technology skill needs for instructional planning by Business Education lecturers. Cluster B consisted of 7 items and sorts for information on the assistive technology skill needs for teaching and learning by Business Education lecturers and Cluster C consisted of 9 items and sorts for information on the assistive technology skill needs for students’ evaluation by Business Education lecturers. A Bipolar scale questionnaire was used to show the perceived

importance and level of possession in order to determine the gap needs on the items. A five - point scales were used for both level of importance and level of possession and assigned nominal value were as follows: Very Highly Important (VHI) = 5, Highly Important (HI) = 4, Moderately Important (MI) = 3, Slightly Important (SI) = 2 and Not Important (NI) = 1. For level of possession: Very Highly Possessed (VHP) = 5, Highly Possessed (HP) = 4, Moderately Possessed (MP) = 3, Low Possessed (SP) = 2, Not Possessed (NP) = 1.

The instrument was face validated by three lecturers from the Department of Business Education in University of Nigeria, Nsukka. The validates made useful impact like modifications and re-structuring that led to the reproduction of the final questionnaire for the study. The reliability of the instrument was established using Cronbach Alpha ( $\sigma$ ). Twenty (20) copies of the instrument were administered to business education lecturers of University of Uyo and University of Calabar. The reliability coefficient of 0.88, 0.76, and 0.69 were obtained for each cluster while 0.78 was obtained for the overall three clusters of the instruments. The questionnaires were administered through personal contact with the help of four research assistants.

Data collected from the respondents were analyzed using Statistical Package for the Social Sciences (SPSS- 21.0). The statistical tools for data analysis were mean and improvement Need Index (INI). Assistive technology skills need of lecturers was determined as follows; the mean ( $\bar{X}_i$ ) of each skill-item under “needed” category was calculated; the mean ( $\bar{X}_p$ ) of each item under the “possessed” category was also calculated; the difference between the two means was calculated ( $\bar{X}_i - \bar{X}_p$ ). This gave the value that indicated whether competency improvement was needed or not in each item. This was referred to as the performance gap (P.G) that is  $P.G = (\bar{X}_i - \bar{X}_p)$ . Thus;

Where the difference was zero ( $\bar{X}_i - \bar{X}_p = 0$ ) that was neutral, it indicated that there was no need for competency improvement on the item because the level of needs on the item was equal to the level at which graduates possess the same item. Where the difference was positive ( $\bar{X}_i - \bar{X}_p = +$ ), it indicated that there was competency improvement need on the item because the level at which the item was needed was greater than the level at which the lecturers could perform the item. Where the difference was negative ( $\bar{X}_i - \bar{X}_p = -$ ), it indicated that there was no competency improvement need on the item because the level at which lecturers can perform the item was greater than the level at which the item was needed. That is, the lecturers can perform the skill to the level at which it was required and even above.

## Results

The data in Table 1 shows that all the suggested skill items had their performance gap (PG) values ranged from 0.59 to 2.39. This indicated that business education lecturers in universities in South East, Nigeria needs training in applying assistive technology in instructional planning as the performance gap is positive and more than zero.

**Table 1.** Performance Gap Analysis of mean ratings of business education lecturers on assistive technology skill needs in instructional planning by business education lecturers for impaired students in federal universities in South Nigeria

S/N	Ability to:	$\bar{X}_n$	$\bar{X}_p$	PG ( $\bar{X}_n - \bar{X}_p$ )	Remark
1	add psychomotor activities in assistive technology during lesson planning to aid impaired students.	4.59	2.20	2.39	IN
2	set activities that improve motor skills among students using assistive technology to learn.	4.11	3.33	0.78	IN
3	consider the brightness of the classroom while preparing classes with impaired students.	3.91	2.93	0.98	IN
4	consider sound clarity while planning teaching that involves the use of assistive technology by impaired students.	4.44	3.22	1.22	IN
5	to add practical lessons on the use of assistive technology software for all students.	4.52	3.93	0.59	IN
6	to add students activities that includes those that are using assistive technology while preparing for lesson.	4.70	4.10	0.60	IN
<b>Grand Mean</b>		<b>4.38</b>	<b>3.29</b>	<b>1.09</b>	<b>IN</b>

Key:  $\bar{X}_n$  = Mean of Needed,  $\bar{X}_p$  = Mean of performance, PG = Performance gap, IN = Improvement Needed.

The data in Table 2 shows that all the suggested skill items had their performance gap (PG) values ranged from 0.01 to 1.71. This indicated that business education lecturers in universities in South East need skill training in using assistive technology in teaching and learning with students with disability.

**Table 2.** Performance Gap Analysis of mean ratings of business education lecturers on assistive technology skill needs in teaching and learning by business education lecturers in federal universities in South East, Nigeria

S/N	Ability to use:	$\bar{X}_n$	$\bar{X}_p$	PG ( $\bar{X}_n - \bar{X}_p$ )	Remark
7	pencil grips to assist impaired students in class.	3.90	2.19	1.71	IN
8	modified paper to assist impaired students in class.	4.19	2.55	1.64	IN
9	Timer to assist disabled students in class.	4.74	3.89	0.85	IN
10	graphic organizer to assist impaired students in class.	4.81	4.10	0.71	IN
11	checklists to assist disabled students in class.	4.02	3.97	0.05	IN
12	electronic wheelchairs to assist impaired students in class.	3.77	3.76	0.01	IN

13	alternative keyboards to assist impaired students in class.	4.16	3.82	0.83	IN
14	voice recognition software to assist impaired students in class.	3.81	2.99	0.82	IN
<b>Grand Mean</b>		4.17	3.41	0.83	<b>IN</b>

**Key:**  $\bar{X}_n$  = Mean of Needed,  $\bar{X}_p$  = Mean of performance, PG= Performance gap, IN= Improvement Needed.

The data in Table 3 shows that all the suggested skill items had their performance gap (PG) values ranged from 0.13 to 1.54. This indicates that business education lecturers in universities in South East, Nigeria need skill training in the use of assistive technology in evaluation of students with impairment.

**Table 3.** Performance Gap Analysis of mean ratings of business education lecturers on assistive technology skill needs in evaluation by business education lecturers in federal universities in South East, Nigeria

S/N	Ability to set question that can be attended to by using:	$\bar{X}_n$	$\bar{X}_p$	PG ( $\bar{X}_n - \bar{X}_p$ )	Remark
15	pencil grips during evaluation.	4.74	3.89	0.85	IN
16	modified paper during evaluation.	3.92	3.44	0.48	IN
17	timer to assist impaired students in class during evaluation.	3.8	2.94	0.86	IN
18	graphic organizer to assist impaired students in class during evaluation.	3.55	2.12	1.43	IN
19	checklists to assist impaired students in class during evaluation.	2.97	2.00	0.97	IN
20	electronic wheelchairs to assist impaired students in class during evaluation.	3.86	2.32	1.54	IN
21	alternative keyboards to assist impaired students in class during evaluation.	3.8	3.67	0.13	IN
22	voice recognition software to assist impaired students in class during evaluation.	3.8	3.67	0.13	IN
<b>Grand Mean</b>		<b>3.74</b>	<b>3.67</b>	<b>0.07</b>	<b>IN</b>

**Key:**  $\bar{X}_n$  = Mean of Needed,  $\bar{X}_p$  = Mean of performance, PG= Performance gap, IN= Improvement Needed.

## Discussion

We discovered that the level at which business education lecturers possess the skill to integrate assistive technology in instructional planning is lesser than the level at which the skill is needed. This shows that there is need for skill improvement by business education lecturers so enable the impaired students partake successfully in the teaching and learning processes. Edet and Chris (2020) supported the findings of this study as stipulated in their study on technology-driven teaching skills' need of business education lecturers and content delivery in a globalised economy.

The study further revealed that the level at which business education lecturers possess the skill to integrate assistive technology in teaching and learning process is lesser than the level at which the skill is needed. This shows that there is need for skill improvement by business education lecturers so enable the impaired students partake successfully in the teaching and learning processes. The findings of this study is supported by the study Yerima (2023) who carried out a study on the effect of assistive technology on visual impaired students'

academic achievement in business studies in special education centres in Taraba and Adamawa States.

The findings also indicated that the level at which business education lecturers possess the skill to integrate assistive technology in the evaluation of impaired students is lesser than the level at which the skill is needed. This shows that there is a need for skill improvement by business education lecturers so enable the impaired students partake successfully in the class evaluation processes. The findings above is in line with the findings of Ajie (2018) who conducted a study on capacity building needs of business education lecturers in ICT-based teaching in tertiary institutions in south-south Nigeria.

## Conclusion

The study determined the assistive technology skill needs of business education lecturers for effective teaching and learning of impaired business education students in 21<sup>st</sup> century in federal universities in South East, Nigeria. Based on the findings of the study, it is concluded that business education lecturers do not possess adequate needed skills to educate students with special disabilities. The results imply that business education lecturers need on the job trainings to enlighten them on the new technological inventions as pertains to assistive technology to enable them to guide the students with disabilities properly in the teaching and learning processes.

## Recommendation

In the light of the findings of the study, the following recommendations are made:

1. Curriculum planners should incorporate special curriculum implementation methods for business education students with impairment that cover the use of assistive technology.
2. The scheme of work for business education students be reviewed and lecturers and other graduates' knowledge on the use of assistive technology be updated so as to ensure that business education students with disabilities will not be left out in the teaching and learning process.

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