

# Assessment on the Use of ICT in Teaching Students with Learning Disabilities and Difficulties

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**Abstract:** The study focused on assessment on the use of ICT in teaching students with learning disabilities and difficulties. The study is a descriptive survey research design, using a population of 62 teachers in special need schools in Asaba metropolis. There was no sampling for the study since the entire population was studied. The instrument used for data collection was a structured questionnaire made up of 15 items. The reliability of the questionnaire was tested using Spearman rank order correlation co-efficient and a coefficient of 0.87 was obtained which suggested a high reliability. Three research questions were raised for the study while one null hypothesis was formulated and tested at 0.05 level of significance. The data collected were analyzed using mean statistics and standard deviation for the research questions and t-test used to test the null hypothesis. The findings of the study revealed that lack of teachers ICT compliance; inadequate provision of ICT tools and environmental challenges has significance effects in teaching students with learning disabilities and difficulties. It was recommended that specialized schools should invest more on the purchase of ICT tools necessary for handling students various learning difficulties; teachers in special need schools should receive in-service training at least once a year to be able to improve their competence in handling new ICT tools and State government should assist the schools' head in providing regular power supply and internet facilities to the schools as most of these ICT tools required power supply and internet access.

**Keywords:** Information and Communication Technology, Teaching, Learning disabilities and difficulties.

## I. INTRODUCTION

Learning disability and difficulties is defined as a physical or mental condition which implies that one cannot use a part of one's body completely or easily or that one cannot learn easily (BBC English dictionary, 2017). It is seen as students who constitute a large group that exhibit severe problems such as blindness, mental retardness, hearing impairment and so on. The Good Schools Guide (2016) however pointed out that some students who have no obvious physical or mental impairment can have trouble managing tasks necessary for learning, such as concentrating, keeping still, making themselves clear or understanding tasks set in class. The term 'Learning Difficulties' (LD) is used to refer to this quite large group of students who need extra assistance with schooling that arise from a vast range of cognitive and physical impairments. A good number of researches have shown that learning can be significantly enhanced when Information and Communication Technology (ICT) is

approached and utilized as an intellectual multi-tool (Lone, 2017; Payal and Kanvaria, 2018).

The innovation that Information and Communication Technology (ICT) has brought into education has made tremendous changes to the lives of people in the society, including students with learning disabilities and difficulties. Information and Communication Technology (ICT) has the potential to enrich and deepen skills, motivate and engage students in learning, help to relate school experiences to work practice, strengthen teaching and provide opportunities for connection between the school and the world (Yusuf in Turel and Johnson, 2012). Etonyeaku (2016) described ICT as all forms of technology used to transmit, store, create, share or exchange information. It is a combination of network of software and hardware as well as a convergence of information, communication and technology. They are technological tools and resources used to communicate, create, organize, disseminate, store, retrieve and manage information and learning. In a broader sense, ICT includes such technologies like radio, television, video, telephone, satellite systems, computers, network, hardware and software. ICT can provide access to information source, create interacting learning environment, enable communication and promote changes in methods of teaching these exceptional students (Obi, 2012).

Teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing dynamic and proactive teaching-learning environment (Moudgill, Lakhanpal and Sharma, 2018). The use of ICT in education generally means technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools. Due to the fact that students are familiar with technology and they will learn better within technology-based environment, the issue of ICT integration in schools, specifically in the classroom is vital. Special need education teachers realize that the computer could be used to effectively train students with different kinds of learning disabilities and difficulties but some schools are still adopting the old fashioned machines, typewriters, chalkboards and conventional teaching methods in teaching students in the classrooms. This could be as a result of lack of ICT compliance and non-availability of ICT tools.

The research carried out by Adam and Tatnall (2017) on the benefits of using ICT in teaching and learning of students with

learning disability showed that using ICT in teaching will improve their skills and academic knowledge greatly. Benmarrakchi, Kafi and Elhore (2017) carried out research on use of ICT in teaching students with dyslexia. Their study analyzed spelling errors faced by the learners of Arabic language. The study discovered that using ICT in teaching students with learning disabilities can improve their self-esteem and self-confidence in learning. Also, the research carried out by Iskrenovic-Momcilovic and Momcilovic on the attitude of teachers that teaches students with learning disabilities using ICT tools, showed that individualized teaching with these ICT tools will be very beneficial. The use of ICT tools will help the students to learn at their own pace progressively.

Furthermore, from the researchers observation when visited some of the special need schools, some schools faced the challenges of not having ICT tools while some with insufficient ICT tools and this propelled the researchers to investigate how effective is the teaching with little or no ICT tools.

#### *Statement of the Problem*

Currently in our educational sector, most schools have keyed into the technological trend of ICT usage in teaching and learning. Despite this, it is quite disheartening to observe that most students with special need do not have knowledge of ICT tools like others. Therefore, this study sought the need to assess the use of ICT in teaching students with learning disabilities and difficulties.

#### *Purpose of the Study*

The purpose of the study is to assess the use of ICT in teaching students with learning disabilities and difficulties. Specifically, the study sought to determine:

1. Teachers' ICT compliance in teaching students with learning disabilities and difficulties
2. Adequate provision of ICT tools in special need schools
3. Environmental challenges in the use of ICT in teaching students with learning disabilities and difficulties

#### *Research Questions*

The following research questions were raised to guide the study.

1. How does teachers' ICT compliance affect teaching students with learning disabilities and difficulties?
2. How adequate is the provision of ICT tools in special need schools?
3. What are the environmental challenges in the use of ICT in teaching students with learning disabilities and difficulties?

#### *Hypothesis*

Ho: There is no significant difference between the mean ratings of male and female teachers' ICT compliance in teaching students with learning disabilities and difficulties.

## II. METHODOLOGY

This paper adopted a descriptive survey research design. The adoption of this design was due to its efficient way of collecting information about the population of interest and ease of administration of research instrument. The study covered special need schools in Asaba metropolis. The population of the study comprised of 62 teachers in special need schools and no sampling was taken since the population was manageable. A structured questionnaire was used as an instrument for data collection. The questionnaire was of two sections. Section A was to obtain general information of the respondents while Section B focused on items to address research questions.

The questionnaire was structured on a four point rating scale with numerical value of Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The instrument was face validated by three research experts, two lecturers from department of computer education and one lecturer from department of measurement and evaluation, Federal College of Education (Technical), Asaba. To establish the reliability of the instrument, a test-re-test method was used. Spearman rank order correlation co-efficient was used to correlate the ten (10) of the instrument responses and a coefficient of 0.87 was obtained which suggested a high reliability. Out of the 62 copies of questionnaires administered by the researchers to the respondents, 58 copies were retrieved after due completion and used for data analysis.

The data was analyzed using mean statistics and standard deviation to answer the three research questions. Any item that obtain a mean score of 2.50 and above was accepted as agreed while items with the mean score of less than 2.50 was taken as disagreed. One hypothesis was tested using t-test statistic at 0.05 level of significance, t-crit was compared with 0.05 level of significance and where t-crit is greater than t-cal of 0.05, the hypothesis of no significant difference was upheld but where the t-crit is less than 0.05, the hypothesis of no significant difference was rejected and at 56 degree of freedom.

#### *Presentation of Results*

*Research Question 1:* How does teachers' ICT compliance affect teaching students with learning disabilities and difficulties?

Table 1: Teachers' ICT compliance in teaching students with learning disabilities and difficulties

S/N	STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D	REMARK
1.	Lack of human resources on ICT tools utilization affect the teaching of students in special need schools.	25	23	8	2	3.09	0.99	Agree
2.	Teachers' ICT compliance helps to provide latest and current issues where students with learning disabilities and difficulties can obtain it very easily and integrate it into their learning process.	16	33	5	4	3.05	0.80	Agree
3.	Upgrading of teachers through in-service training programme on ICT utilization could enhance teaching.	55	2	1	0	3.93	0.31	Agree
4.	Teachers acquired knowledge of ICT motivates and encourage them to improvise tools during teaching process.	26	18	7	7	3.09	1.02	Agree
5.	Teachers skills in ICT brings about independent teaching.	44	12	2	0	3.72	0.52	Agree
	<b>GRAND MEAN</b>					<b>3.38</b>		<b>Agree</b>

Source: Researcher's field survey data, 2021.

Analyses in Table 1 revealed that the mean scores range from 3.05 – 3.93. The respondents unanimously agreed on all statements in items 1-5. Data in Table 1 showed that the grand mean score for the entire items is 3.38, which falls above the cutoff point of 2.50 which is agree. This revealed that

teachers' ICT compliance positively affect the teaching of students with learning disabilities and difficulties.

*Research Question 2:* How adequate is the provision of ICT tools in special need schools?

Table 2: Adequate provision of ICT tools in special need schools.

S/N	STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D	REMARK
6.	Computer simulation is adequate for teaching and learning process in special need schools	0	1	56	1	2.00	0.19	Disagree
7.	There are adequate instructional television for teaching and learning various subjects in special need schools.	0	0	55	3	1.95	0.22	Disagree
8.	There are adequate internet facilities available to teachers and students for academic research purposes in special need schools.	2	0	44	12	1.86	0.57	Disagree
9.	There are adequate projector facilities for teachers to share notes digitally during teaching and learning in special need schools.	6	2	49	1	2.22	0.64	Disagree
10.	There are adequate computer laboratory and ICT tools for both teachers and students' academic use in special need schools.	2	1	33	22	1.71	0.67	Disagree
	<b>GRAND MEAN</b>					<b>1.95</b>		<b>Disagree</b>

Source: Researcher's field survey data, 2021.

Analyses in Table 2 revealed that the mean scores range from 1.71 – 2.22. The respondents disagreed on all the statements in items 6-10. Data in Table 2 showed that the grand mean score for the entire items is 1.95, which falls below the cutoff point of 2.50 which is disagree. This revealed that there is

inadequate provision of ICT tools in special need schools in the area.

*Research Question 3:* What are the environmental challenges in the use of ICT in teaching students with learning disabilities and difficulties?

Table 3: Environmental challenges in the use of ICT in teaching students with learning disabilities and difficulties

S/N	STATEMENTS	SA	A	D	SD	$\bar{x}$	S.D	REMARK
11.	Incessant electric power supply from the national grid has affected the use of ICT tools in teaching and learning.	46	11	1	0	3.78	0.46	Agree
12.	Unstable internet connection due to school location and other weather conditions.	24	31	3	0	3.36	0.58	Agree
13.	Inadequate classrooms facilities for students.	13	44	1	0	3.21	0.45	Agree
14.	Insecurity of ICT tools/facilities in special schools located in remote areas of the city.	38	20	2	0	3.60	0.55	Agree
15.	Technical difficulties such as low connectivity, virus attack and malfunctioning of some hardware components cause interruptions in teaching and learning process.	49	9	0	0	3.84	0.36	Agree
	<b>GRAND MEAN</b>					<b>3.56</b>		<b>Agree</b>

Source: Researcher's field survey data, 2021.

Analyses in Table 3 revealed that the mean scores range from 3.21 – 3.84. The respondents totally agreed on all the statements in items 11-15. Data in Table 3 showed that the grand mean score for the entire items is 3.56, which falls above the cutoff point of 2.50 which is agree. This revealed that there are environmental challenges in the use of ICT in teaching students with learning disabilities and difficulties. Some of the environmental challenges include incessant electric power supply; unstable internet connection;

inadequate classrooms facilities; insecurity of ICT facilities and technical difficulties such as low connectivity, virus attack and malfunctioning of some hardware components.

*Hypothesis*

There is no significant difference between the mean ratings of male and female teachers' ICT compliance in teaching students with learning disabilities and difficulties.

Table 4: Analysis of t-test on the Mean and Standard Deviation Responses of Male and Female Teachers' ICT Compliance in Teaching Students with Learning Disabilities and Difficulties

Respondents	N	$\bar{x}$	S <sup>2</sup>	Df	t-cal	t-crit	α	Remark
Male	17	1.35	0.71	56	0.05	2.00	.05	<b>Retain Ho</b>
Female	41	1.34	0.60					

Where;

- N = number of sample
- $\bar{x}$  = mean of sample
- S<sup>2</sup> = standard deviation
- t.cal = calculated value of the test
- t.crit = critical value of the test

From the t-test table, since t-cal (0.05) < t-crit (2.00), we retain Ho. The null hypothesis is hereby retained that there is no significant difference between the mean ratings of male and female teachers' ICT compliance in teaching students with learning disabilities and difficulties.

III. DISCUSSION OF FINDINGS

The data presented in table 1 provided answers to the research question one. The findings revealed that teachers' inability to utilize the ICT tools makes them lag behind their counterparts. This finding agreed with the findings of Lone (2017) which revealed that teaching can be significantly enhanced when ICT is approached and utilized as an intellectual multi-tool. Ikelegbe (2017) stressed that education in Nigeria today cannot be relevant without effective preparation of new generation to effectively use the ICT tools in their professional practice. Also Ikenga, Nwachokor and Nwalado (2010) stressed that proper utilization of ICT tools can lead to the enhancement of quality teaching and learning in schools by leading to innovative pedagogical methods, new ways of learning and interacting among learners and teachers in the communities.

The data presented in table 2 provided answers to research question two. The findings revealed that provision of ICT tools in special need schools in the area under study was inadequate. This is true because it was found that instructional television for teaching and learning various subjects in special schools was inadequate; internet facilities available for academic research purposes and projectors for teachers to share notes digitally during teaching was also inadequate. This finding is in line with the findings of Chapelle (2016) who submitted that there has been lack of or inadequate ICT tools and internet access in special need schools. The study further

showed that some schools have computer but this could be limited to one computer in the office only and that even in schools with computers, the student-computer ratio was usually high.

The data presented in table 3 provided answers to research question 3. The findings revealed that majority of the respondents agreed with the items stated as environmental challenges in the use of ICT tools in teaching students with learning disabilities and difficulties. This finding is in consonant with the findings of Balanskat, Blamire and Kefala (2016) which revealed that although teachers appear to acknowledge the value of ICT in schools, they continue encountering obstacles during the processes of adopting these technologies into their teaching and learning activities.

IV. CONCLUSION

Information and communication technology is considered as a vital tool for improving the quality of education in every nation and teachers are seen as important ingredient in the utilization of ICT tools in education. Without the involvement of teachers, most students in special need schools may not take the advantages of all the available potential gains of utilizing the ICT tools at their own pace. Therefore, teachers need to be given adequate training on the utilization of ICT tools and its integration in the classroom activities to enhance skills and creativity among the students.

V. RECOMMENDATIONS

From the findings of the study, the following recommendations were made;

1. Specialized schools should invest more on the provide ICT tools necessary for handling students various learning difficulties.
2. Teachers in special need schools should receive in-service training at least once a year, to be able to improve their competence in handling new ICT tools.
3. State government should assist school heads in providing regular power supply and internet facilities to the schools as most of these ICT tools require power and internet access.
4. School authority should ensure that the learners have individual access to all the necessary ICT tools they require for learning.
5. School authority should also provide support services digitalizing teaching materials, improving learning environments and promote digital inclusion in order to reduce the digital gap among the students.

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