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PERCEPTION OF TEACHERS ON PROSPECTS AND CHALLENGES OF DIGITAL ASSESSMENT IN ELEMENTARY SCHOOLS IN DELTA STATE NIGERIA

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Abstract

It is not enough to teach children with ICT tools, and there is the need to scale up and expand the use of these tools in assessment. Therefore, the main purpose of this study is to analyze teachers' perceptions of the prospects and challenges in using ICT tools in assessment in elementary schools in Delta State. A quantitative survey research design was used to collect the data randomly from a sample of 183 school teachers in 18 elementary schools in the three senatorial districts in Delta State, Nigeria. The results showed that teachers responded positively to almost all the twelve likely benefits of digital assessment to students; ranging from the fact that digital assessment will help learners live in the reality of their age, be equipped gradually with relevant skills needed at a higher level.The study also established the likely challenges schools will encounter in the journey to digital assessment, and these include, lack or inadequate computers, connectivity, network and classroom space. Therefore, it is recommended that relevant authorities implement new technologies into the school assessment system.

Keywords: ICT, assessment, prospects, challenges

Introduction

Assessment is an essential aspect of education because it involves finding out a student's strengths and limitations. There are three significant categories of assessment documented in the literature: diagnostic, formative, and summative (Loop, 2018); Guide to Assessment in Early Childhood. (2008.) explains diagnostic assessment as a placement tool that occurs before training. It can determine prerequisite skills, the pupil's past degree of mastery, or categorize the pupil based on various criteria. While formative assessment helps the teacher and the student to find out how well they are learning, and summative evaluation occurs after teaching.

Assessment generally serves different purposes in education. Loop (2018) outlined it as follows:

- Screening – identifying pupils who may require a more comprehensive examination or early intervention
- Referral – using observation and current performance as a basis of seeking more formal assessment
- Classification – using the results of tests to determine eligibility to access services based on predetermined criteria
- Instructional planning – information from tests, usually diagnostic or criterion-referenced tests, is used to develop an individual learning plan

- Monitoring progress – tests (formal and informal) help to review a pupils' current le of achievement and progress and to compare with previous records of achievement
- Checking mastery - criterion-referenced tests give information on whether pupils ha mastered specific curriculum content
- Developing understanding - lead to an understanding and acceptance of the learni difference for teachers, parents and pupil
- Therapeutic – to remove self-doubts and negative thinking and facilitate init counselling
- Empowering the pupil – enables the pupil to develop strategies and to self-mana problems

Information and Communication Technology (ICT) covers any product that will sto retrieve, manipulate, transmit or receive information electronically in a digital form (e personal computers, including smartphones, digital television, email, or robo (Wikipedia, 2021). The world has gradually become a global village through t utilization of ICT tools. Almost everything in the world is controlled or done with IC tools. So, our present-day learners in Preprimary, Primary, Secondary and even terti institutions born in this ICT era are known, digital natives. It is thus imperative to integ ICT into the learning process to prepare them to function effectively in this digital age a the nearest future.

Some schools started using ICT in teaching and learning in the early 1980s, yet so ma schools in Nigeria are yet to embrace it because of its inherent challenges. Previ studies like Pellegrino & Quellmalz, 2010; Winkley, 2010; Schwartz and Arena, 20 Angus and Watson, 2009 have outlined the possible benefits of digital assessment as:

- Provision of quick feedback to learners and teachers, which can aid in t improvement of the learning process.
- Increase the autonomy, agency, and self-regulation of learners.
- Collaborative learning support – Provides chances for peer evaluation, knowled building and sharing activities, co-evaluation, and social engagement.
- Ensure genuineness and increase the measuring range – Digital technologies c elicit and assess multi-faceted abilities, sets of knowledge, and cognitive process that were previously difficult to test
- Responsiveness that is adaptable and improve data management efficien (marking, moderating, and storing information) by assisting teachers in maki better use of their time and resources; provides more environmentally friend assessment administration.
- Improve student achievement and assessment validity and reliability

Despite these immense benefits, some past studies like Mogey (2011), Mansell (200 Whitelock and Watt (2008) identified challenges with digital assessment as: One, concer from practitioners concerning plagiarism detection and invigilation. Also, difficulties wi scalability and transferability of practices, especially in higher education, where varie departments frequently have autonomous, separate working methods and cultures Th also identified concerns about the validity and dependability of high-stakes testing. Anoth challenge is the investment costs - implementing new technology systems necessitat significant investments in training, support, and interoperability. Furthermore, some too necessitate a significant capital investment and infrastructure that many institutions do n prioritize (e.g., having enough computers for individuals taking examinations for m

reen assessment). Finally, these studies pointed out the lack of suitable physical spaces r technology-enhanced assessment.

ere is a paucity of data on the use of digital assessment in elementary schools rticularly from the point of view of educators what teachers, th us, a study of this nature imperative. This study is looking beyond using ICT tools for teaching and learning that me schools are already practicing but its utilization for assessment in Primary school tting. Though some examinational bodies in Nigeria started a few years ago using digital ols (CBT) for their entrance examination. Also, some universities have equally troduced digital tools for both entrance and end of semester examinations. Introducing T tools for assessment in Basic school will be ideal so that learners will be well quainted with it before entering high school. For learners to use ICT as assessment tools, achers have a crucial role in preparing children for this task. It is, therefore, necessary to vestigate their perception on the likely benefits and challenges of the digital tools for ssessment. Six research questions were raised this guide this study.

ethods

his study used survey design to collect and analyze data from all the participants. One ndred eighty-three school teachers in 18 Basic schools in the three senatorial districts in elta State, Nigeria, were randomly selected for the study. Six schools were randomly lected from each of the three Senatorial Districts in the State. All the Elementary achers in the selected schools took part in the study. Teachers Perception Questionnaire n Prospects and Challenges of ICT prepared by the researchers was used to collect data om the selected samples. The questionnaire has three sections and 34 items. The three ctions cover: Section A- Personal information, Section B- Potential benefits of digital ssessment to students, teachers, and the community, and Section C- Potential challenges ith digital evaluations. The questionnaire used a four-point Likert scale, with 4 dicating Strongly Agreed, 3 indicating Agreed, 2 indicating Disagreed, and 1 indicating rongly Disagreed. The samples responded to the statements given and chose their swers based on their perceptions. The survey was distributed by hand to the participants. ll of the participants volunteered themselves in the research. The result was analyzed ing Statistical Packages for the Social Sciences (SPSS) version 22. The researchers alyzed the frequency and proportion of the entire population in the demographic ckdrop using descriptive analysis.

strument Validity

e validation was done using Content and Construct Validity. As a first step, one of the searchers designed the questionnaire by conducting a Literature Review on the prospects d challenges of digital assessment. Later, a panel of four professional critically amined the items in the questionnaire. Based on their recommendations, some of the estions were either removed or revised and some items were included the estionnaire was then administered to 55 persons to find out if the questionnaires are adable and understandable. The construct validity of the instrument was verified through ctor analysis. The factor analysis yielded three subscales, which explained over 67.2% the variance (benefit to students explained 34.1% of variance, benefit of teachers plained 11% of the variance and challenges explained 22.1% of the variance. This formation provides evidence of construct validity for the instrument.

Instrument Reliability

To establish the reliability, we administered the questionnaire to 30 teachers in a Basic school in Agbor. The Cronbach Alpha (∝) yielded .71, .76, and .80 for Section B (benefits for students), Section C (benefits for teachers) and Section D (likely challenges respectively.

The result was analyzed using Statistical Packages for the Social Sciences (SPSS) version 22. The researchers analyzed the frequency and proportion of the entire population in the demographic backdrop using descriptive analysis. It's also utilized to figure out what the mean, standard deviation, frequency, and percentage are.

Results

Demographic Information of Respondents

Table 1:

Variables	Frequency	Percentage
Age		
<25	22	2.0
25-35	59	32.2
36-50	64	35.0
>50	38	20.8
School Type		
Private	92	50.3
Public	91	49.7
Class you Teach		
Basic 1-3	80	43.7
Basic 4-6	72	39.3
Basic 7-9	31	16.9
Experience (Years)		
1-5	55	30.0
6-10	41	22.4
11-20	42	23.0
>20	45	24.6
Senatorial District		
Delta South	60	32.8
Delta Central	63	34.4
Delta North	60	32.8

About 2%, 32.2%, 35.0% and 20.8% of the Basic school teachers' age was less than 25 years, 25 -35 years, 36 -50 years and greater than 50 years respectively. The teachers were from Private schools (50.3%) and public schools (49.7%). Also, 43.7%, 39.3% and 16.9% of the teachers teach Basic 1-3, 4-6 and 7-9 respectively. For years of experience, 30.0%, 22.4%, 23.0% and 24.6% of the teachers have 1-5 years, 6-10 years, 11-20 years and more than 20 years' experience respectively. About 32.8%, 34.4% and 32.8% of the Basic teachers were drawn from Delta South, Delta Central and Delta North senatorial districts respectively.

Research Question One

What are the likely prospects of digital assessment for students as perceived by teachers?

Table 2

SN	Items	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
1	Live in the reality of this digital life.	183	91	49.7	78	42.6	12	6.6	2	1.1
2	Be equipped gradually with relevant skills needed at higher level	183	99	54.1	63	34.4	14	7.7	7	3.8
3	Learn to work with speed and within expected time limit.	183	101	55.2	63	34.4	14	7.7	5	2.7
4	Work independently during test and examination	183	74	40.4	85	46.4	17	9.4	7	3.8
5	To be more engaged in learning process.	183	83	45.4	75	41.0	20	10.9	5	2.7
6	Build their confidence for future academic endeavour	183	74	40.4	86	47.0	17	9.3	6	3.3
7	Be distracted and lose focus	183	22	12.0	44	24.0	72	39.3	45	24.7
8	See digital technologies as learning tools	183	73	39.9	82	44.8	21	11.5	7	3.8
9	Prepare to navigate a universe of digital choices	183	54	29.5	103	56.3	22	12.0	4	2.2
10	Have unbiased result	183	52	28.4	65	35.5	50	27.3	15	8.7
11	Get immediate feedback	183	70	38.3	88	48.1	22	12.0	3	1.6
12	Do assessment remotely (anywhere) not necessarily in the school	183	78	42.6	81	44.3	16	8.7	8	4.4

From Table 2, considering strongly agree (SA) and agree (A) together, all the items lie between 63.9% to 92.3% except for item 7. These percentages were above the benchmark of 50%. Also, majority of the teachers agreed that these 11 items were likely prospect of digital assessment for students. Hence, items 1, 2, 3,4,5, 6, 7, 8, 9, 10, 11 and 12 were accepted as the likely prospect for digital assessment for students as perceived by teachers. Item 7 was rejected because its percentage (36%) is below the benchmark of 50%.

Research Question Two

What are the likely prospects for teachers as perceived by teachers?

Table 3:

SN	Item	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
1	Digital assessment will save time and energy as the system automate results	183	113	61.7	57	31.1	11	6.0	2	1.1
2	Enhance / efficiencies of assessment	183	84	45.9	87	47.5	9	4.9	3	1.6
3	Teachers to be grounded in the use of digital tools	183	83	45.4	84	45.9	15	8.2	1	0.5
4	Reduce stress among teachers	183	93	50.8	69	37.7	19	10.4	2	1.1
5	Let teachers have less work load	183	74	40.4	78	42.6	26	14.2	5	2.7
6	Teachers do less paper work	183	87	47.5	72	39.3	12	6.6	12	6.6

Table 3 summarizes the likely prospect of digital assessment in Basic schools for teachers. The percentages for items 1 , 2, 3, 4, 5 and 6 when strongly agree (SA) and agree (A) are taken together ranges fron 91.3% to 83%. These percentages are above the benchmark of 50%. Also, majority of the 183 teachers agreed that the six items were likely prospect of

Digital assessment in Basic schools for teachers. Hence, we accepted them as like prospect of digital assessment in Basic schools.

Research Question Three
What are the likely challenges of the availability of ICT tools as perceived by teachers?

Table 4:

S/N	Item	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
1	Lack of computer laptops in most schools	183	110	60.1	56	30.6	11	6.0	6	3.3
2	Lack of functional computers or laptops in schools	183	96	52.5	65	35.5	8	4.4	14	7.

From Table 4, the teachers perceived that item 1 with percentage of 90.7% and item 2 w percentage of 88% were likely challenges of digital assessment on availability of teachi materials. Their percentages were above the benchmark of 50%. Also, more than two-th of the teachers agreed that the two items were likely challenges of digital assessment x availability of teaching materials. Hence, we accept these two items as likely challenges digital assessment under availability of teaching materials.

Research Question Four
What are the likely challenges on connectivity as perceived by teachers?

Table 5

S/N	Item	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
3	Lack of internet connection	183	81	44.3	69	37.7	24	13.1	9	4.9
4	No internet connects in remote areas	183	88	48.1	73	39.9	16	8.7	6	3.3
5	The internet may be slow	183	69	37.7	89	48.6	15	8.2	10	5.5

In table 5, the teachers perceived that items 1, 2 and 3 with percentages of 82%, 88%, a 86.7% respectively are likely challenges of digital assessment with regard to connectivi These percentages are above the cut-off mark of 50%. In addition, majority of the teache agreed that these three items are likely challenges of digital assessment with regard connectivity. Based on this information from the findings, The three items are like challenges of digital assessment with regard to connectivity.

Research Question Five
What are the likely challenges of digital assessment with regard to competence perceived by teachers?

Table 6

S/N	Item	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
6	Some teachers might lack the needed technical support skill to support digital assessment	183	71	38.8	85	46.4	21	11.5	6	3.3
7	Most teachers may lack teaching models on how to use ICT for teaching and assessment	183	66	36.1	77	42.1	31	16.9	9	4.9
11	Lack of interest on the part of the teacher to use digital tools for assessment	183	49	26.8	59	32.2	48	26.2	27	14.8

Table 6 summarizes the likely challenges of digital assessment with regard to competence as perceived by Basic school teachers. The percentages for items 1, 2 and 3 are 85.2%, 73.2%, and 59% respectively. These percentages are above the benchmark of 50%. Most of the 183 Basic school teachers agreed that the three items were likely challenges of digital assessment with regard to competence for Basic schools. Hence, we accepted the three items as the likely challenges of digital assessment with regard to competence for Basic schools.

Research Question Six

What are the likely challenges of digital assessment with regard to space and furniture as perceived by teachers?

Table 7

SN	Item	N	SA		A		D		SD	
			No	%	No	%	No	%	No	%
1	Current school sitting arrangement	183	39	21.3	91	49.7	41	22.4	12	6.6
2	Current classroom size	183	47	25.7	86	47.0	39	21.3	11	6.0
3	Current classroom furniture	183	49	26.8	78	42.6	35	19.1	21	11.5

Table 7 showed the likely challenges of digital assessment with regard to space and furniture as perceived by Basic school teachers. The percentages of items 1, 2 and 3 are 72.0%, 72.7%, and 69.4% respectively. These percentages are above the cut-off mark of 50%. Also, most of the 183 Basic school teachers agreed that the three items were likely challenges of digital assessment with regard to space and furniture or Basic schools. Hence, we accepted the three items as the likely challenges of digital assessment with regard to space and furniture for Basic schools.

Discussion

The findings of this study showed that teachers in Basic schools Delta perceived that digital assessment will really benefit the students. They responded positively to almost all the twelve likely benefits of digital assessment to students; ranging from the fact that digital assessment will help learners live in the reality of their age, be equipped gradually with relevant skills needed at a higher level, learn to work with speed and within expected time limit, prepare to navigate a universe of digital choices etc. This shows that digital assessment has immersed benefits and should be introduced from Basic School, Bainstridge, (2007) in his study too discovered the value of ICT for students learning outcomes, personal confidence and competency. Interestingly, is the fact that many of them refute the claim that digital assessment will cause distraction to the students. Majority of the teachers agreed that digital tools will benefit the teachers themselves; as it will help them save time and energy; enhance efficiency, reduce stress and encourage less workload Another finding from this study on the likely benefit of digital assessment is teachers will do less paper work which is tandem to the advocacy in this age of less paper work.

The study also revealed the likely challenges schools might face with digital assessment. Majority of the teachers agreed that the tools needed are not readily available or adequate. There are schools that do not have computers or tablets at all, while some have just few that cannot adequately cater for all the students. Aside the hardware that are not available, the teachers also agreed that network connectivity, technical know-how and classroom

space might be a real challenge in digital assessment. This corroborates the findings of other research work that connectivity and network might be a real challenge both in remote and urban areas. Past studies also revealed that lack of staff time and training for rethinking assessment methodologies and how to use new technologies from a technological and pedagogical standpoint pose a challenge in implementing digital assessment (Mansell, 2009; Whitelock and Watt, 2008)

Conclusion

The study has established the likely benefits and challenges of digital assessment as perceived by teachers in Basic schools in Delta State. The study revealed that digital assessment will help both the learners and the teachers. Among the many benefits for learners are: it will help them as digital natives to live in the reality of their time, navigate digital choices, work with speed and within time limit. The study also confirmed that teachers will have less stress and work load and assessment results will be unbiased. In spite of these benefits, the study also established the likely challenges schools will encounter in the journey to digital assessment, and these include, lack or inadequate computers, connectivity, network and classroom space

Recommendations

Based on the findings of this study, the following recommendations are suggested:

- Relevant agencies in the State should be proactive by making adequate plans for the implementation of digital assessment. Necessary equipment should be bought and supplied to Government schools
- Supervising Agencies for Basic schools should insist on Private schools having adequate facilities and tools for digital learning and assessment either before approval or renewal process is concluded
- Technical training of all teachers to enable them have required skills to effectively use ICT tools for both learning and assessment
- Adequate funding and provision that will take care of connectivity even in remote areas in the State
- Classrooms should be redesigned to cater for space needed for ICT tools
- Require furniture should be supplied to schools
- Effective monitoring device should be put in place to ensure the programme runs well

References

Angus, S.D. and Watson, J. (2009) 'Does regular online testing enhance student learning in the numerical sciences? Robust evidence from a large data set'. *British Journal of Educational Technology, 40* (2), 255-272.

A Guide to Assessment in Early Childhood; Infancy to Age Eight. Washington State Office of Superintendent of Public Instruction, 2008

Loop, E. "Advantages & Disadvantages of Informal Assessment in Early Childhood Education."Synonym,https://classroom.synonym.com/advantages assessment-early-childhood-education-8487340.html.Accessed 30 October 2018.

Mansell, W. (2009). 'Why hasn't e-assessment arrived more quickly?' The Guardian. 21 July. Available online from http://www.guardian.co.uk/education/2009/jul/21/online-exams-Schools

McAlpine, M. (2012) 'Collaborative assessment and the assessment of collaboration. *International Journal of e-Assessment, 2* (2),234-245

ley, N. (2011) 'What is it that is really acting as a barrier to widespread use of summative assessment in UK higher education

egrino, J. W. &Quellmalz, E.S. (2010) 'Perspectives on the Integration of Technology and Assessment'. *Journal of Research on Technology in Education,43 (2),* 119-134.

stridge, S. (2007). Engaging with the transforming possibilities of ICT. Australian Educational Computing, *22(2)*, 3□9

wartz, D.L. & Arena, D. (2009) Choice-Based Assessments for the Digital Age. Stanford University

elock, D. and Watt, S. (2008) 'Reframing e-assessment: adopting new media and adapting old frameworks. Learning, *Media and Technology, 33 (3)*, 151-154.

kley, J. (2010) E-assessment and innovation. A Becta report. Available from: emergingtechnologies.becta.org