

UNIJERPS
Unizik Journal of Educational Research and Policy Studies Vol.4;
https://unijerps.org
2021 Impact Factor: 5.641; 2020 Impact Factor: 5.355.
January-June, 2021
Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363

ACADEMICJOURNALS
expand your knowledge
http://www.academicjournals.org

ASSESSMENT OF TECHNOLOGY LEADERSHIP COMPETENCE OF HEAD TEACHERS IN MODEL PRIMARY SCHOOLS IN RIVERS STATE

DR. NDIDI LORETTA OKEKE
Department of Educational Management and Policy
Faculty of Education
Nnamdi Azikiwe University, Awka, Anambra State.
ndysco@hotmail.com;08037769698

ABSTRACT
The use of technology as an instructional tool has unveiled the need for school administrators to become technology leaders. This study is a descriptive survey research aimed at assessing the technology leadership competence of 254 head teachers in model primary schools in Rivers State. A structured questionnaire named "Head Teachers Technology Leadership Competence Questionnaire (HTLCQ)" designed in a 4 point Likert format was used for data collection. The instrument was face and content validated by three experts in Educational Management and Measurement and Evaluation. A reliability coefficient of 0.74 was obtained using Cronbach Alpha. The study utilized mean and standard deviation for analyzing the data collected and the findings revealed that head teachers in model primary schools possess competence for staff development, infrastructure support and interpersonal communication skills but lacked competence in articulating a compelling vision and developing an action plan. The study recommended that school leaders should involve teachers in developing school vision and the ministry of education should train and retrain head teachers on how to develop technology leadership competence.

Keywords: Technology leadership, Assessment, Information Communication Technology, Head Teachers

INTRODUCTION
Leadership is said to be the pivot to a successful school outcome, not only schools, but in any other organizational activity. Leadership influences, motivates, encourages and activates potentials in staff members. It discovers,

UNIJERPS

assesses and provides resources needed for the accomplishment of identified organizational goals. Leadership is not static, it changes with the times. According to Bendekovic (2012), leadership requires the willingness to recognize the need for change and then the ability to lead that change. The era of computer and internet is a big change to the way we do things in the 21st Century. They have the attribute of supporting instructional activities and also effective in administrative practices. Teachers and students need the back up of technology literate school leaders to achieve their full potentials in teaching and learning. Thus, school leaders are to identify their positions and new roles in teaching, learning and administrative practices to be part of this change.

Technology leadership has been defined by many scholars but one thing they share in common is the ability to use and manage technology (Schmeltzer, 2001; Yee, 2000).Okeke and Dike, (2019) see it as strategies head teachers use to create and sustain support services for ICT integration, use and evaluation in schools. School leaders are to seek out additional funds to help meet schools technology needs and ensure that teachers and students have access to networked computers. Apart from providing support, school technology leaders are expected to know how to effectively use technologies available in the schools. That way, they can spearhead the use of the tools in their schools.

Valdez (2004) pointed out three reasons why head teachers should possess technology leadership competence; one of the reasons was to train pupils to become relevant in a computer driven society; secondly to develop Information Communication Technology (ICT) savvy teachers and pupils; and to make education purposeful to learners. The head teachers' exhibition of technology leadership competence will go a long way to influence teachers to acquire ICT skills needed for teaching and learning in schools.

In a study by Chang, Chim and Hsu (2008), to discover the perceptions of 1880 teachers on the dimensions and implementation of principals' technology leadership practices in 188 elementary schools in seven cities in Taiwan. The findings identified vision, staff development, infrastructural support, evaluation and research as comprising principals' technology leadership dimensions. These dimensions according to researchers are

UNIJERPS

the head teachers' core areas in dealing with teaching, learning and administrative operations in schools (Chang as cited in Okeke & Dike (2019).

In another study carried out by Duncan (2011) on the assessment and evaluation of principals' technology leadership in Virginia. The study was based on the National educational technology standards for administrators (NETS-A) and a sample size of 208 principals and assistant principals were used. The study found Virginias' public school administrators not meeting minimum rating for leadership and vision while the met the minimum rating for support, management and operations (Duncan, 2011).

Technology Leadership Competence

The ability of a leader to develop a compelling vision for ICT use is very important as it guides and direct teachers on what to do. Vision is an informing idea of the goals and objectives of a school. It helps leaders focus attention on the core areas needed to achieve predestined goals. Chang (2012) noted in their study, that vision is the foundation of technology leadership, and without a compelling vision staff members will not know what to do with ICT facilities. The head teachers articulate ICT vision by communicating it to school stakeholders in a clear and unambiguous manner. A well-articulated vision helps stakeholders understand their positions in the school ICT big picture.

Planning is the process head teachers use in articulating a formulated vision. A good plan starts with a vision outlining clearly stated achievable goals (Kloom, 2008). Roles are mapped out for teachers and pupils, funding needs are identified and strategies for providing support described.

Staff development is another aspect of technology leadership, it is the process of developing ICT skills in staff members. It includes giving support to teachers as they employ ICT to their teaching practices (Technology in School, 2002). Successful staff development programs usually includes identifying the technological needs of the school which can be gleaned from assessing of situations on ground such as facilities and equipment available (Abosede, 2015). Chang et al (2008) noted that principals should encourage teachers' technology skill acquisition by planning and designing future technology staff development programs.

Technology infrastructure support is a needed skill by school leaders. It

UNIJERPS

involves the process of providing ICT facilities and support services for effective ICT programs in schools. ICT facilities such as videos, televisions, computers, overhead projectors, smart boards should be made available by the head teachers. Anderson and Dexter (2000 as cited in Okeke & Dike, 2019)) found out in their study that the amount of money spent on ICT was a factor influencing technology leadership. Schools can get financial support from Parents Teachers Associations (PTA) and other stakeholders of the school (Okeke, 2019). Head teachers should also discover means of generating funds internally.

Another important technology leadership competence is the ability of school leaders to successful evaluate ICT programs in their schools. Evaluation can be inform of observing teachers use ICT to teach pupils, rating teachers ICT utilization and providing feedback to stakeholders who will be interested in knowing the extent at which their objectives have been achieved. Furthermore, Chang et al (2008) found evaluation to be a factor in effective technology leadership. Hence, head teachers should continuously evaluate the effectiveness of ongoing ICT programs

Head teachers also need to know how to use research to discover new technologies. For instance smart phone is a current form of telephone; computer is a current form of typewriter. Technology is not static, it is always evolving. School technology leaders should be on the lookout for current technologies and learn how to use them to create meaningful school activities. Anderson and Dexter (2005) found that effective technology leaders were aware of current technological advancements and understood how to integrate them into the classrooms. Technology leaders according to Chang et al (2008) continuously researched new technologies to discover ICT tools that are cost efficient and also yield better result when used in teaching and learning.

Interpersonal communication skill is a variable needed by head teachers to build positive working relationship with teachers. For school administrators to communicate the ICT vision effectively they require listening and verbal skills, ability to relax when ICT workshops are not going accordingly; ability to be optimistic and assertive when necessary. Also school leaders need strong interpersonal and communication skills

UNIJERPS


UNIJERPS
Unizik Journal of Educational Research and Policy Studies Vol.4;
https://unijerps.org
2021 Impact Factor: 5.641; 2020 Impact Factor: 5.355.
January-June, 2021
Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363

ACADEMICJOURNALS
expand your knowledge
http://www.academicjournals.org

to be effective technology leaders (Chang et al, 2008).

Interest in this study was triggered by a publication on "Fostering a school technology vision in school leaders" by Richardson, Kelvin and Justin (2013). Their study was about understanding how school leaders shift their vision of school technology as a result of participating in a school technology leadership course. At the onset of the study, a pre-assessment test was administered to twenty doctoral students, to write technology leadership vision statement for the schools where they work. The researchers then, exposed the students to a course on technology leadership. After the course, a post-assessment was administered and the students were asked to revisit their vision statements and improve on them based on their experiences from the course (Richardson et al, 2013). The result of the post-assessment revealed shifts in their vision statements. The students were able to make better and more detailed technology vision statement than they previously did. Since technology leadership is a necessary requirement for effective use of ICT and since Rivers State model primary schools have ICT centres, this study intends to find out the technology leadership competencies of head teachers in model primary schools in River State.

Statement of Problem

Computer is basically needed in every facet of human endeavours. In education, its knowledge is as necessary as reading, writing and numeracy. Teachers need it to enhance teaching and learning while students need it to remain active in class. In administration, school leaders need it for easy and quick documentations. However, studies have shown that the effective use of these technologies in schools can only be possible through the technology leadership of the school administrators. Do head teachers in model primary schools have the technology leadership competence to support, coach and mentor teachers to become effective ICT users? Thus, this study sets to find out the technology leadership competence of head teachers in model primary schools in Rivers State?

Research Questions

1. What is the head teachers' competence for articulating a compelling vision in Model primary schools in Rivers State?
2. To what extent do head teachers possess competence for technology

UNIJERPS

planning in model primary schools in Rivers State?

3. To what extent do head teachers possess competence for technology infrastructure support in model primary schools in Rivers State?
4. What is the level of head teachers' staff development competence in model primary schools in Rivers State?
5. What is the head teachers' competence for interpersonal communication in model primary schools in Rivers State?

Research Methodology

The study adopted a descriptive survey design, which sought to assess head teachers technology leadership competence. The population of the study comprised of 254 head teachers in model primary schools in Rivers State. Census technique was used to select the entire population of head teachers in model primary schools in Rivers State. This method was found suitable because the population was not vast. Five research questions guided the study and a self–developed questionnaire "Head teachers Technology Leadership Competence Questionnaire" (HTTLCQ) was used. The instrument consists of 29 descriptive items and was face and content validated by three experts from the Departments of Educational Management and Measurement and Evaluation. The reliability of the instrument was tested using Cronbach Alpha Coefficient and a reliability coefficient of 0.74 was obtained. A total of 254 copies of questionnaire were administered but only 246 head teachers responded to the instruments. The data collected were analysed using mean and standard deviations. For research questions, real limit of numbers was used such that mean values between 0.00 – 1.49 were considered to be Very Low Extent (VLE), 1.50 – 2.49 were considered to be Low Extent (LE) while 2.50 – 3.49 were considered to be High Extent (HE) and between 3.50 – 4.00 were considered to be Very High Extent (VHE).

UNIJERPS

UNIJERPS
Unizik Journal of Educational Research and Policy Studies Vol.4;
https://unijerps.org
2021 Impact Factor: 5.641; 2020 Impact Factor: 5.355.
January-June, 2021
Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363

ACADEMICJOURNALS
expand your knowledge
http://www.academicjournals.org

RESULTS

Research Question 1

What is the head teachers' competence for articulating a compelling vision in Model primary schools in Rivers State?

Table 1: Mean Response of Head Teachers on their Vision Competence

S/NO	Item Statement	Mean	SD	Remark
1	My school has a vision statement for ICT use	2.14	0.76	LE
2	The ICT vision of my school was developed by the head teacher	3.09	0.97	HE
3	In coming up with the vision for ICT, teachers were involved	2.05	0.94	LE
4	Teachers are committed to the vision	1.50	0.83	LE
5	I clearly communicated the ICT vision among stake holders	2.13	1.06	LE
	Average Mean/SD	**2.18**	**0.91**	**LE**

Result from Table 1 revealed a grand mean of 2.18, which shows that head teachers in model primary schools have low level of competence for stating a compelling vision on ICT use. The standard deviation of items which ranged from 0.76 to 0.97 indicated homogeneity in the opinion of respondents.

Research Question 2

To what extent do head teachers possess competence for technology planning in model primary schools in Rivers State?

Table 2: Mean Scores of Head Teachers on their Planning Competence

S/NO	Item Statement	Mean	SD	Remark
6	I find out ways of purchasing ICT equipment	2.48	0.64	HE
7	I hire technicians to maintain ICT equipment	2.05	0.96	LE
8	I establish an ICT committee in my school	2.05	0.54	LE
9	I create supportive conditions to foster the integration of ICT during instruction	2.38	0.87	LE
10	I model the practice of ICT to the school staff	2.36	0.80	LE
11	I hire technology savvy teachers	2.46	0.71	LE
12	I use funds from PTA levies to purchase ICT equipment	2.48	0.59	LE
13	I inform teachers of the availability of ICT materials	2.20	0.66	LE
	Average Mean/SD	**2.31**	**0.72**	**LE**

Result from Table 2revealed a grand mean of 2.31 which shows that Head teachers in model primary schools in Rivers State posses slow planning competence. The standard deviation of items which ranged from 0.54 to 0.96 indicated homogeneity in the opinion of respondents.

Research Question 3

What is the level of head teachers' staff development competence in model primary schools in Rivers State?

Table3: Mean Scores of Head teachers on their Staff Development Competence

S/NO	Item Statement	Mean	SD	Remark
14	I invite ICT coordinators to train teachers on how to integrate ICT in teaching	2.89	0.72	HE
15	I observe teachers using ICT during instruction.	2.25	0.87	LE
16	I conduct ICT awareness workshops in the school	2.37	0.85	LE
17	I schedule ICT activities to enhance ICT use by teachers	2.44	0.84	LE
18	I encourage repeat of ICT activities until teachers have mastered the skills	2.39	0.89	LE
19	I create extra time for teachers to practice technology	2.66	0.88	HE
	Average Mean/SD	**2.50**	**0.85**	**HE**

Result from Table 3revealed a grand mean of 2.50 which indicates that Head teachers in model primary schools in Rivers State have high level of competence for staff development. The standard deviation of items which ranged from 0.72 to 0.89 indicated homogeneity in the opinion of head teachers.

Research Question 4

To what extent do head teachers possess competence for technology infrastructure support in model primary schools in Rivers State?

Table 4: Mean Scores of Head teachers on their Infrastructure Support Competence

S/NO	Item Statement	Mean	SD	Remark
20	I seek out additional fund to help meet the school's technology needs.	2.42	0.76	LE
21	I ensure that all pieces of equipment are in good working conditions.	2.52	1.03	HE
22	I encourage safe and efficient use of ICT facilities.	2.82	0.62	HE
23	I make sure teachers are provided with networked computers	2.85	1.04	HE
24	I make sure teachers and students have unlimited access to ICT when needed	2.75	0.70	HE
	Average Mean/SD	**2.62**	**0.83**	**HE**

Result from Table 4 revealed a grand mean of 2.62 which shows that Head teachers' in model primary schools in Rivers State possess high level of Infrastructure Support Competence. The standard deviation of items which ranged from 0.62 to 1.04 indicated homogeneity in the opinion of respondents.

UNIJERPS
Unizik Journal of Educational Research and Policy Studies Vol.4;
https://unijerps.org
2021 Impact Factor: 5.641; 2020 Impact Factor: 5.355.
January-June, 2021
Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363

ACADEMICJOURNALS
expand your knowledge
http://www.academicjournals.org

Research Question 5

What is the head teachers' competence for interpersonal communication in model primary schools in Rivers State?

Table5: Mean Scores of Head teachers on their Possession of Interpersonal Communication Competence

S/NO	Item Statement	Mean	SD	Remark
25	I exhibit empathy for teachers' technology needs	2.69	0.94	HE
26	I maintain good relationship with staff in regards to technology use	2.78	0.70	HE
27	I interact with stakeholders to communicate new ideas in regards to ICT	2.89	0.83	HE
28	I use social media to pass school information to students and parents	2.78	0.75	HE
29	I collaborate with teachers on the needed ICT equipment	2.60	0.69	HE
	Average Mean/SD	**2.75**	**0.78**	**HE**

Result from Table 5 revealed a grand mean of 2.75 which indicates that Head teachers' in model primary schools in Rivers State possess high level of Interpersonal Communication competence. The standard deviation of items which ranged from 0.69 to 0.94 indicated homogeneity in the opinion of respondents.

Discussions of Findings

The result in table 1revealed a grand mean of 2.18, which suggest that head teachers in model primary schools possess low level competence for making articulated vision statement on technology use. The study noted that teachers were not involved in creating the vision and so were not committed to the vision. This could be as a result of the inability of the head teachers to carry the teachers along. The findings agreed with the findings of Duncan (2011) who discovered that the principal in Virginias' public schools did not meet the minimum mean rating for vision.

The result from Table 2, discloses a grand mean of 2.31for head teachers planning competence, this shows that head teachers in model primary schools possess low level competence in planning for ICT use. The head teachers failed to establish ICT committees and also did not make teachers aware of available ICT materials in their schools. This is in line with Kloom (2008) who noted that a good plan starts with a vision. Since the head teachers did not have a compelling vision it invariably means that they will not have a good plan. Vision according to Chang (2012) is the foundation of technology leadership.

The result of table 3revealed a grand mean of 2.50 which indicates that head teachers in model primary schools possess high level of staff development competence. They invite ICT coordinators to train teachers on how to use ICT and also create extra time for teachers to practice learned technologies. These findings collaborate with Chang, (2012) who noted that school administrators should encourage teachers to acquire technology skills by providing adequate time for training.

The result of table 4 revealed a grand mean of 2.62 which indicates that head teachers in model primary schools possess high level of competence for technology infrastructure support. The head teachers made sure all equipment were in good working condition and sought for additional funds to meet the schools' technology needs. This collaborates with Anderson and Dexter (2000) who noted that head teachers should provide technology infrastructural support in their schools.
Table 5revealed a grand mean of 2.75 which indicates that head teachers possess high level of interpersonal communication competence. The head teachers agreed that they interact with school stakeholders to communicate new ideas in regards to ICT. This findings is in agreement with the views of Chang et al (2008) who found out that interpersonal and communication skills are important antecedents to principals' overall effective technology leadership.

Conclusion

Based on the findings of this study, the researcher concluded that head teachers in model primary schools in Rivers State lack competence in articulating a compelling vision statement, and in planning for ICT use. On the other hand, they have competence for staff development, technology infrastructure support and interpersonal

UNIJERPS

communication skills. It is important to note that technology leadership competence is an imminent prerequisite for school leaders in the 21st Century. Technology has become the language of the day, hence head teachers must develop competence in formulating a compelling vision for ICT and mapping out strategies to achieve the vision.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Head teachers should involve teachers in developing school ICT vision.
2. School administrators should equip themselves through training on how to develop ICT action plans.
3. Head teachers should imbibe good ICT maintenance culture to avoid loss of equipment.
4. The ministry of education should train and retrain head teacher on technology leadership skills.

REFERENCES

Abosede, C.O. (2015). Staff training and development and quality education delivery. *Literacy Information and Computer Education Journal (LICEJ), 1(4) 234-276.*

Anderson, R. E. & Dexter, S. L. (2005). School technology leadership: *An empirical investigation of prevalence and effect. Educaional Administration Quarterly, 41* (1), 49-82.

Anderson, R. E., & Dexter, S. L. (2000). School technology leadership: Incidence and impact. Retrieved on 12th May 2018 from http://www,crito.uc.edu/tlc/findings/report-6

Bendekovic, D. (2012). Leadership is not Static. www.Libraryjournal.com.

Chang, I. (2012). Principal technology leadership on teachers' technology literacy and teaching effectiveness in Taiwanese Elementary schools. *Educational Technology and Society, 15(2), 328-340*

Chang, I. H. Chin, J. & Hsu, C. M. (2008). Teachers' perceptions of the dimensions and implementation of technology leadership of principals in Taiwanese Elementary schools. *Educational Technology and Society, 11(4) 229-245*

Chang, I. (2003). Assessing the dimensions of principals effective Technology leadership;

UNIJERPS

An application of structural equation modelling. *Educational Policy Forum 6(*1), 111-141.

Duncan, J. (2011). An Assessment of Principal Technology Leadership: A State-wide Survey. Retrieved from http//scholars Compass.vcs.edu/etd/2621 on 16th March, 2018.

ISTE (2018) National educational technology standards for administrators. Retrieved from https://www/iste.org/standards/for-administrators on 26th May, 2018.

Okeke, N. L. (2019). School technology leadership: A new concept. *International journal of innovative development and policy studies 7(2), 50-56*

Okeke, N.L. (2020). Assessment of teachers' competence in computer software in model primary schools in Rivers State East Senatorial district. *International journal of innovative education research 8(4):10-16*

The Knowledge Loom. (2008). Leadership principles in technology. The education alliance. Brown University. Retrieved from http:// www.alliance.brown.edu on 3 Mayth, 2018.

Richardson, J. W; Kevin, F. & Justin, B. (2013). Fostering a school technology vision in school leaders. NCPEA *International Journal of Educational Leadership Preparation, (1) 144-158*

Rivers State Universal Education Board (2017). List of Model Primary Schools in Rivers State.Port Harcourt.

Scanga, D. (2004). Technology Competencies for School Administrators: Development and Validations Study, a Self-assessment Instrument. Dissertation Abstract international, 65 (02A), 372.

Schmeltzar, T. (2011).Training administrations to be technology leaders. Retrieved from http;//www.techleasneey.com/db-area/additives/TL/2001 06/Training. Phpon 2 July, 2018

Technology in Schools. (2002). Suggestions, tools, and guidelines for assessing technology in elementary and secondary education. National center for education statistics. Retrieved on 26th May, 2018

UNIJERPS

fromNces-ed.gov/pubs2003/2003313.pdf.

Valdez, G. (2004). Critical issue: Technology leadership. Enhance positive educational change, Retrieved on 26th May, 2018 from http://www.ncrel.org/eds/aseal/issues/educations/leadership/le700.htm

Yee, D. L. (2000): Images of Schools Principal's information and communication technology leadership. *Journal of Information Technology for Teachers Education 9(3*), 287-302.

Yusuf, M. O. (2007). Trends and Barriers on the Integration of Information and Communication Technology in Nigeria Education System. Department of Curriculum studies, Olabisi Onalanjo University Ago, Iwoye, Nigeria. Retrieved on 26th May 2018 from www.unilorin.edu.nglindex.phpyusufmotm.tot

UNIJERPS