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Teachers' Knowledge Management And Students' Academic Performance In Public Senior Secondary Schools In Port Harcourt Metropolis Of Rivers State

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ABSTRACT

This study investigated teachers' knowledge management and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. Two research questions and two hypotheses guided the study. The study adopted a correlational research design. The population of the study consisted of 2,131 teachers teaching in the 35 public senior secondary schools in Obio/Akpor and Port Harcourt Local Government Areas of Rivers State. A sample of 380 teachers consisting of 256 females and 124 males were drawn through stratified random sampling technique for the study. The instrument for data collection was a self-structured questionnaire titled, "Teachers' Knowledge Management and Students' Academic Performance Questionnaire". The instrument was validated by two experts in Measurement and Evaluation and Educational Management. The reliability of the instrument was determined using test-retest method to achieve a reliability index of 0.86. The research questions were answered using the Pearson Product Moment Correlation Coefficient (PPMCC) while the null hypotheses formulated were tested using t-transformation at 0.05 level of significance. Findings revealed a positive relationship between teachers' knowledge generation and acquisition and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. It was recommended that, teachers teaching in public senior secondary schools in Port Harcourt Metropolis should adopt knowledge generation and knowledge acquisition, for equitable knowledge management in their schools.

Keywords: Knowledge Management, Knowledge Generation, Knowledge Acquisition

INTRODUCTION

Knowledge management is the understanding, information and skills derived from education and or experience. Knowledge guarantees the survival of individuals, group or race and a nation. Individuals need knowledge of some particular skill to live and succeed in organizations especially the school and as an organization. The essence of sending children to school is to enable them acquire knowledge that will help them to become responsible people in the future. In other words, the school is a place where relevant knowledge is acquired. Teachers play significant roles in the acquisition of knowledge by the students in schools. Teachers are regarded as people who have acquired certain level of knowledge by reason of their training and professional practice and therefore presented as agents of knowledge sharing or dissemination. According to Ukala, Madumere-Obike and Nwabueze, (2015) teachers engage in activities such as knowledge acquisition, knowledge creation, knowledge packaging and knowledge application which are known as the components of knowledge management.

Knowledge management was defined by Barron (2012:48) as "an integrated systematic approach to identifying, managing and sharing all of an enterprises information asset including databases, documents, policies and procedures, as well as previously unarticulated expertise and experience held by individual workers". The essence of knowledge management is to enhance the quality of the contributions of

employees into their institutions and assisting them to make sense of the context within which the institution exists, to take responsibility, to corporate and share what they know and learn, and to effectively challenge, negotiate and learn from others. Knowledge management in this study refers to the ability of school principals, administrators and teachers to acquire, store, share, retrieve, transfer and disseminate information and skills within and outside the school for academic purposes and facilitation of students' academic performance. The school is faced with increased pressure from the government, stakeholders, parents and students for improvement in the 21st Century. Reasons for which schools remain as organized where knowledge is gained to enhance teachers' competence.

There is no gain saying that the academic success of students is determined by teachers' competences in their job. A teacher's competency level could be regarded as the extent to which he has the required knowledge and skills to teach (Suleiman, 2017). Knowledge is never static but dynamic due to technological changes and innovations taking place around the world. This makes it necessary for teachers to update their pre-service obsolete knowledge through constant and deliberate capacity building programmes, so as to enhance knowledge management in schools.

Knowledge management according to Grant (2016) is very important because it could be used by schools as an alternative strategy to improve competitive performances in the education industry. Knowledge management could be seen as a strategy, approach or framework that enables school managers or administrators to develop a set of practices to collect information and knowledge, and share what they know, leading to actions that improve services and outcomes. Knowledge management brings together the three core organizational resources (people, process and technologies) to enable the school to use and share information and knowledge more effectively. In other words, knowledge management in the education system and schools in particular covers information practices and learning strategies that help to improve the use and sharing of information in decision making.

According to Chu, Wang and Yuen (2011), school knowledge management can facilitate acquisition, sharing and application of teachers' knowledge in schools so as to better manage and apply school's tangible and intangible knowledge assets, especially the professional knowledge experiences and competencies of teachers. In this study, knowledge management components such as: knowledge generation and knowledge acquisition and how they affect students' academic performance are discussed. There are many other kinds of knowledge that needs to be managed in schools such as information about students' performance or best practices among others. Teachers, therefore develop and acquire different kinds of knowledge in schools where knowledge management is applied to facilitate effective administration of the schools.

Knowledge management significantly enhances effective decision making and it is central to achieving academic performance and effective management of the education sector. This demand, for a strong commitment to ensuring that students are recognized as active agents in their learning environment and knowledge management is designed to promote performance and instigate effective utilization of schools' resources, excellent academics, proper coordination in the management of secondary schools as well as harmonious relationship between stakeholders in the management of the schools. It is therefore necessary that secondary schools teachers understand the role of knowledge management and apply it in their everyday activities to enable them overcome academic challenges and achieve desired goals of the school system.

Students' academic performance shows the extent to which students pass their internal and external examinations adequately. It is an indication or expression of the extent to which instructional objectives are achieved. It shows the level of knowledge students have acquired at a certain level of education. The school administrators, parents, teachers and the students themselves are happy when the level of academic performance is high but when the reverse is the case, it is generally worrisome.

Acquisition of knowledge storage and its spread seem to have waned in secondary schools for which examination malpractice and the extermination of the culture of students study habits seem be at the peak is mind boggling. Hence, the investigated knowledge management and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Knowledge Generation and Students' Academic Performance

One of the major cardinal goals of the education sector is the generation and utilization of knowledge (Zhao, 2010). The school system does its best to continue to enhance their existing methods of operation and programmes in order to find out adequate ways of identifying, storing, duplicating and applying new knowledge. Conducting knowledge generation in schools is enhanced today with the use of information and communication technology (ICT). The members of the school community need to have a clear understanding of what knowledge generation is all about. This will enable them to understand that, nobody is a monopoly of knowledge and because of this; everybody needs to be humble and sincerely learn from one another since the ultimate goal of knowledge management is to enhance the quality of service delivery in the secondary schools which will translate to better academic performance of students.

Knowledge generation is one of the components of knowledge management. It involves the creation of new knowledge in the organization. This comprises of activities associated with the entry of new knowledge into the system. It includes knowledge development, discovery and capture (Zhao, 2010). Individuals obtain new knowledge by going closer or attaching themselves to new sources of knowledge which may be individuals or organizations. The process of knowledge generation starts with people sharing their internal tacit knowledge by socializing with others or by capturing it in digital and analogue forms, then the people internalize the shared knowledge (Andra, 2018). According to Mohayidin, Azirawani, Kamaruddin and Margono (2011), people generate new ideas or knowledge through discussions with peers and experts, observations, by experimentation, etc. In the same direction, Andra (2018) explained that members of an organization develop knowledge through learning, problem solving, innovation, creating and importation from outside sources. According to them, new knowledge can also be generated through tacit and explicit knowledge.

In the school system, the head teachers and the teachers are the knowledge managers. The school through its various programmes involves the teachers and the students in knowledge generation. Students have the privilege of contributing to class discussions guided by their teacher. They also engage in discussions with their class mates and peer groups. These activities encourage the students to learn and understand some of the things that they didn't understand before. The students often learn from their teachers who are professionals and experts in their various disciplines. They learn through observations and repeating after them some of the concepts they have explained to them. The students are involved in carrying out some experiments in the school laboratories. They follow the guidelines and principles to arrive at a conclusion. Sometimes they may have assignments that involve experimentation at home or outside the school. Most of the government secondary schools have standard laboratories for the study of science subjects. These activities result to knowledge creation which enhance the academic performance of the students.

Students on their own explore the internet and intranet to generate new knowledge. Digital tools such as computers have enhanced knowledge creation greatly. With the ICT gadgets one can easily explore different areas of interest in order to generate new knowledge. Sometimes, this occurs in the school under the guardians of the teacher while at times it could be individual practice by the students. The students are at times involved in group projects or assignments where they work together as a team to conduct a research on a particular issue or problem. At the end they submit their report to their teacher. Through this process, new knowledge is generated to enhance students' academic performance.

One of the factors that enhance knowledge generation is the organizational culture (Andra, 2018). Organizational culture can be described as a relatively tacit infrastructure of ideas that shape not only a person's thinking but also his/her behaviour and perception of his/her working environment. Organizational culture establishes a set of guidelines by which members of the organization work and it defines how the organization is structured. Some public secondary schools have well established organizational culture that is not easy for new employees to change but rather, they have to key into it (Nyenwe & Isikaku, 2012). The schools encourage the teachers to work together and share ideas. They have well planned programmes that challenge the teachers to be up and doing thereby developing a high level of discipline among the staff and students and fostering internal and external competitions. These factors encourage knowledge management tremendously.

Another important factor that makes knowledge management possible is information culture. Information culture such as comprehensive ICT infrastructure policy where the school ensures that their students and teachers are digital literates. This makes information sharing easier and faster. The management of the school ensures that information disseminated within the school meets the organizational needs and expectations. Hence, there is thorough supervision of all school activities by the school management, administrators and teachers at their respective levels. All these enhance students' academic performance because proper knowledge management leads to the delivery of quality teaching and learning.

Knowledge Acquisition and Students' Academic Performance

Knowledge acquisition is defined by Mohayidin, Azirawni, Kamaruddin and Margono (2011) as the process of acquiring and capturing information about knowledge in the explicit forms. One major problem involved in knowledge acquisition is that most of the knowledge resides in the heads of professionals or experts and this implicit knowledge cannot be easily documented into its explicit form. These experts or professionals usually have vast amount of knowledge useful to the school as a whole. In most organizations, knowledge is acquired through research, internet, intranet, seminars, workshops, bulletins, periodicals and notices (Malone, 2012). In the school system knowledge is acquired by listening to experts or professionals; through the social media and through excursions or exchange programmes (Edikpa, Nwabueze, Iremaka & Solomon, 2018).

The school through its various programmes students' acquisition of knowledge. Although students acquire some fraction of knowledge gained through trainings and experiences from home. It is the responsibility of the school to build upon what the students already know, via their families, friends, peer groups, churches and the social media. The various knowledge acquisition programmes enhance the students' academic performance. Chu, Wang and Yuen (2011) in a study concluded that knowledge acquisition could be used as an alternative strategy by schools to help teachers to become equipped with relevant knowledge and skills to face the challenges of improving students' academic performance. This was to enable teachers have confidence in themselves while discharging their functional roles in school.

It has been observed that there has been a consistent decline in the academic performance of students generally in Nigeria (Iloabuchi, 2014; Ekundalo, 2010). Researchers, policy makers, economists and educators tend to engage themselves in studies to find lasting solution to the decline in knowledge acquisition. While some blame poor academic performance on faulty knowledge acquisition process, others fault the paucity of instructional facilities. The major cause of this may be connected to poor or faulty knowledge acquisition process. Lawnson and Tari (2011) observed that majority of primary and secondary schools in different parts of Nigeria operate without basic facilities such as seats, desks, good chalkboard, toilet facilities, with students learning under dilapidated buildings with leaking roofs, unequipped laboratories, libraries without books and learning resources; when these facilities are very critical in knowledge acquisition. They play very important role in determining the extent quality knowledge can be acquired by the teachers and eventually transferred to the students.

The teachers need to acquire theoretical and practical subject knowledge of teaching concepts that they teach. These modules of teaching are usually enhanced by laboratories and workshops, special classrooms where practical works and experiments are carried out for the students to understand how the concepts of a subject work. Teachers acquire more knowledge and skills which they impact on students when they have well equipped laboratories and workshops and when they are professionally trained to present complex theories in a simple practical mode. It can thus be concluded that teachers as knowledge managers need competence and commitment to duty as well as adequate provision of physical learning resources to greatly affect knowledge acquisition.

Zhao (2010) considered finance, class size, teacher quality, length of school year, technology, outdated and largely irrelevant curricula, lack of interest and seriousness on the part of students as factors affecting knowledge acquisition by teachers for better academic performance of the students. Adequate financial support is very important for the provision of school facilities and employment of adequate quality and quantity of human resources for effective and efficient knowledge management.

The students must be serious and highly interested in their school programmes. They must also be willing to actively participate in the various knowledge acquisition activities initiated by their schools or evolving from their own interest. They do this by carrying out their school work, doing their assignments, reading their textbooks and other written materials, visiting various sites on the internet and intranet as well as participating in social media. It is important to state that students are almost exposed to unlimited sources of knowledge acquisition due to numerous digital tools available to them. In as much as students are at ease to explore their world; they need to be properly guided in the process of knowledge acquisition, to get appropriate knowledge fit for academic excellence.

Students' educational outcome and academic success is greatly influenced by the type of school which they attend. The school one attends is the institutional environment that sets the parameters of a students' learning experience. Depending on the environment, a school can either open or close the doors that lead to high academic performance. Ige (2013) conducted a study on provision of secondary education in Nigeria, where he indicated that, the type of school a child attends influences his academic performance. It was argued that educational institutions have an independent effect on student attainment and knowledge acquisition. The effect of a school is likely observable through variation in quality and attitudes of secondary school graduates.

In a similar study carried out by Kwankura (2013) on academic performance and scientific involvement of final year medical students from urban and rural backgrounds; observed that students from urban backgrounds had significantly better academic and research indicators than those from rural and remote backgrounds. This supports the fact that environment influences knowledge acquisition.

Engagement of students on excursions and exchange programmes are sources of acquiring new knowledge. Many secondary schools especially private secondary schools engage their students in different forms of excursion locally and internationally. There are some private secondary schools that have foreign affiliations. Their students are engaged on exchange programmes with their foreign counterparts. These programmes provide opportunities for their teachers and students to visit so many places of interest, interact with different people and observe and learn a lot of things that are not available in their localities.

Statement of the Problem

Adequate knowledge management is very essential in the effective administration of secondary schools. This is because knowledge management is pivotal to effective decision making in the school system. It is also essential for effective teaching and learning. The school is a centre where knowledgeable and skilled people are produced through proper coordination of the activities of the human resources (teachers and students) and adequate utilization of other physical resources as well as proper instructional methods. Knowledge and technology are dynamic which makes it necessary for teachers to update themselves through various capacity building programmes. It is through capacity building programmes that teachers acquire new knowledge to handle instructional facilities. They gain new skills and ideas on effective ways to transfer knowledge to learners without much difficulty. The knowledge management principles of acquiring, creating, sharing, applying and storing knowledge are very important to the school system if the students must be performing well. It was in the light of the above that the National policy on Education (FRN, 2013) stated that the goals of teacher education shall be to: produce highly motivated, conscientious and efficient classroom teachers, encourage the spirit of enquiry and creativity in teachers; provide teachers with the intellectual and professional background adequate for their assignment and to make them adaptable to changing situations and so on. These basics were enshrined in the policy on education to produce teachers who can acquire, create, share, apply and store knowledge to impact on their students' academic performance in secondary schools. However, there is a perception of students' poor academic performance in public senior secondary schools in Port Harcourt Metropolis, hence the researchers sought to find out the relationship with some principles of knowledge management and academic performance of students.

Purpose of the Study

The purpose of this study was to examine the relationship between teacher's knowledge management and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. The objectives of the study are to:

1. determine the relationship between knowledge generation by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.
2. examine the relationship between knowledge acquisition by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Research Questions

1. What is the relationship between knowledge generation by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State?
2. What is the relationship between knowledge acquisition by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State?

Hypotheses

Ho_1 There is no significant relationship between knowledge generation by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Ho_2 There is no significant relationship between knowledge acquisition by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

METHODOLOGY

The study adopted a correlational research design. The population of the study was 2,131 teachers from 36 public senior secondary schools in Obio/Akpor and Port Harcourt Local Government Areas of Rivers State. A sample size of 372 teachers and 14 public senior secondary schools in Port Harcourt Metropolis of Rivers State was derived using the stratified random sampling technique. Two questionnaires were used for data collection titled "Teachers' Knowledge Management Questionnaire (TKMQ) and Students' Academic Performance Questionnaire (SAPQ)". The instruments had two (2) sections, sections A and B. Section A dealt with demographic information while Section B had 10 questionnaire items. The instruments were validated by experts in Educational Management and Measurement and Evaluation. The reliability of the instruments were determined using test-retest method and a reliability indexes of 0.86 and 0.82 were obtained. The research questions were answered using the Pearson Product Moment Correlation Coefficient (PPMCC) or "r" while the null hypotheses formulated were tested using t-transformation at 0.05 level of significance, $t = r\sqrt{\frac{n-2}{r^2}}$

RESULTS

Research Question 1: *What is the relationship between knowledge generation by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State?*

Table 1: Summary of Pearson Product Moment Correlation Coefficient on the Relationship Between Knowledge Generation by Teachers and Students' Academic Performance in Public Senior Secondary Schools

		TEACHERS' KNOWLEDGE GENERATION	STUDENTS' ACADEMIC PERFORMANCE
TEACHERS' KNOWLEDGE GENERATION	Pearson Correlation	1	.727**
	Sig. (2-tailed)		.000
	N	372	372
STUDENTS' ACADEMIC PERFORMANCE	Pearson Correlation	.727**	1
	Sig. (2-tailed)	.000	
	N	372	372

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's SPSS Data output (2021).

Table 1 showed the responses to questionnaire items 1-5 on teachers' knowledge generation and students' academic performance. It revealed a high and positive relationship between teachers' knowledge generation and students' academic performance in public senior secondary sschools in Port Harcourt Metropolis with a Pearson Product Moment Correlation Coefficient value of 727**.

Research Question 2: *What is the relationship between knowledge acquisition by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State?*

Table 2: Summary of Pearson Product Moment Correlation Coefficient on the Relationship Between Knowledge Acquisition by Teachers and Students' Academic Performance in Public Senior Secondary Schools

		TEACHERS' KNOWLEDGE ACQUISITION	STUDENTS' ACADEMIC PERFORMANCE
TEACHERS' KNOWLEDGE ACQUISITION	Pearson Correlation	1	.543**
	Sig. (2-tailed)		.000
	N	372	372
STUDENTS' ACADEMIC PERFORMANCE	Pearson Correlation	.543**	1
	Sig. (2-tailed)	.000	
	N	372	372

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's SPSS Data output (2021).

Table 2 revealed the responses to questionnaire items 6-10 on teachers' knowledge acquisition and students' academic performance. The table further indicated that there is a positive but moderate relationship between teachers' knowledge acquisition and students' academic performance in public senior secondary schools in Port Harcourt Metropolis with a Pearson Product Moment correlation coefficient value of .543**.

Hypotheses

Ho_1 There is no significant relationship between knowledge generation by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Table 3: t-Transformation of PPMCC "r" Betweeen Teachers' Knowledge Generation (TKG) and Students' Academic Performance (SAP) in Public Senior Secondary Schools

Variables	N	Df	r-value	t-cal	t-crit.	LS	Decision
Teachers' Knowledge Generation	372	370	.727**	16.43	±1.96	0.05	Rejected
Students' Academic Performance							

Source: Researcher's SPSS Data output (2021).

Table 3 above displayed the t-transformation summary on the significant relationship between teachers' knowledge generation and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. The result revealed a t-transformation value of 16.43 which was greater than the t-critical value of ±1.96. Therefore, the null hypothesis was rejected at 0.05 level of significance and 370 degree of freedom, and the alternative hypothesis was upheld which states that there is a significant relationship between teachers' knowledge generation and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Ho_2 There is no significant relationship between knowledge acquisition by teachers and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

Table 4: t-Transformation of PPMCC "r" Between Teachers' Knowledge Acquisition (TKA) and Students' Academic Performance (SAP) in Public Senior Secondary Schools

Variables	N	Df	r-value	t-cal	t-crit.	LS	Decision
Teachers' Knowledge Acquisition	372	370	.543**	16.43	±1.96	0.05	Rejected
Students' Academic Performance							

Source: Researcher's SPSS Data output (2021).

Table 4 above showed t-transformation of PPMCC "r" between teachers' knowledge acquisition and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State. The result showed a t- transformation value of 16.43 which was greater than the t-critical value of ±1.96. Therefore, the null hypothesis was rejected at 0.05 level of significance and 370 degree of freedom, and the alternative hypothesis was upheld which states that there is a significant relationship between teachers' knowledge acquisition and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

DISCUSSION OF FINDINGS

Findings on research question 1 revealed a high and positive relationship between teachers' knowledge generation and students' academic performance in public senior secondary schools in Port Harcourt Metropolis with a Pearson Product Moment Correlation Coefficient value of .727**. Hypothesis 1 on table 3 also indicated a positive significant relationship between teachers' knowledge acquisition and students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State with a t-calculated value of 16.43 which was greater than the t-critical value of ±1.96. The above findings agree with Andra (2018), Mohayidin; Azirawani; Kamaruddin and Margono (2011), and Nyenwe and Isikaku (2012), who observed that people generate new knowledge through discussions with their peers and experts, observations, by experiment, learning, problem solving, innovation, creating and importing knowledge from outside sources.

Findings on research question 2 on table 3 revealed a positive but moderate relationship between teachers' knowledge acquisition as a variable for teachers' knowledge management and students' academic performance in public senior secondary schools in Port Harcourt Metropolis with a Pearson Product Moment Correlation Coefficient value of .543**. Hypothesis 2 on table 4 also indicated a positive significant relationship between teachers' knowledge acquisition and students' academic performance in

public senior secondary schools in Port Harcourt Metropolis of Rivers State with t-calculated value of 16.43 which was greater than the t-critical value of ±1.96. The above findings were in tandem with Chu, Wang and Yuen (2011) who observed through their study that knowledge acquisition could be used as an alternative strategy by schools to help teachers to become equipped with relevant knowledge and skills to face the challenges of improving students' academic performance. It was concluded that teachers have high moral and confidence in themselves when they are properly informed on what they are doing.

CONCLUSION

The study concluded that teacher's knowledge generation and teacher's knowledge acquisition have a positive relationship with students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State.

RECOMMENDATIONS

1. School administrators and the government through the Ministry of education and the Senior Secondary Schools Board should organize field trips, workshops, conferences, supervisory teaching and exchange programmes for teachers to aid knowledge generation among teachers.
2. Teachers teaching in public senior secondary schools in Port Harcourt Metropolis of Rivers State should be well qualified and adaptable to changes in their environment to acquire the necessary knowledge to impact on students for academic excellence.

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