

Application and Benefits of Knowledge Management (KM) by Teachers in Nigeria

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Abstract: This paper investigated the application and benefits of knowledge management by teachers in Nigeria. A number of objectives were formulated for the study in order to determine the level of application of knowledge management by experienced and less experienced teachers in secondary schools in Nigeria, the benefits of application of knowledge management by teachers, factors militating against the application of knowledge management by teachers in Nigeria. A structured questionnaire survey was used as instrument for data collection. The questionnaire consisted of four sections. The population comprised 283 teachers. The sample of the study was the 283 (census sampling) and 244 returned copies were fit for analysis. Descriptive survey research design was adopted for the study. The major findings of this research are: The level of application of knowledge management by experienced and less experienced teachers in secondary schools in Nigeria is high,, teachers agreed to all benefits listed in the questionnaire. The study identified the following militating factors against the application of knowledge management by teachers in secondary schools: improper selection of knowledge management team to lack of budget for knowledge management project among others. Finally, the level of application of knowledge management by experienced and less experienced teachers in secondary schools does not differ significantly based on their work experience. It was concluded that the deliberate introduction of knowledge management in all categories of schools is very important. To this very end, it was recommended that School authorities should have an open door policy of knowledge management in order to boost the level of knowledge sharing and knowledge sharing behaviour among other recommendations.

Keywords: Knowledge, Knowledge management, Nigerian teachers, Knowledge application, KM .

1 Introduction

Today, knowledge is accepted as an important basis for competitive advantage and many organizations including schools are beginning to establish knowledge management systems. High importance is always placed on the variable known as knowledge, this is because it pushes its possessor to act in order to do things right. Knowledge is seen as a product of utilized information, it is related to action; information alone cannot take action but when information is consumed, effective decision making is therefore inevitable [1].

It is on record that importance is usually placed on knowledge in the 21st century and there is now what is called a knowledge economy where knowledge is seen as a corner stone of the society. In a knowledge economy, significant part of an organization's value consists of intangible assets, such as the value of its workers' knowledge (intellectual capital). The importance of knowledge in schools and businesses should always be recognized. Unfortunately, organizations in Nigeria before now do not give credence to this lofty concept. This is because they neither understand the problems and opportunities nor the strategies and solution. The picture is gradually changing as models, methods, tools and techniques for effective knowledge management are becoming available; and as organizations realize the importance of knowledge, it therefore becomes necessary to adopt it in order to adapt to the changing world [2].

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In an attempt to explain knowledge, [3] referred to knowledge as stored facts accumulated by humans, knowledge is said to be awareness and understanding of something or someone which can also be acquired via education or experience. Knowledge is a product of information put into use. This therefore means that it is an advanced state or level of information; sequel to this, knowledge is better or more regarded than information. Owing to this fact, [4] provided quite a comprehensive definition of knowledge which is derived from information but it is richer and more meaningful than information. It includes familiarity, awareness and understanding gained through experience or study, and results from making comparisons, identifying consequences and making decisions. Knowledge can be divided into two types namely: explicit and tacit knowledge. Explicit knowledge is used to mean codified and formalized knowledge; it is seen as 'know what', it is easily seen, read and understood, this type of knowledge is easily gathered and managed.

While explaining the typology of knowledge, [5] opined that explicit knowledge is that knowledge which is easily documented and codified as it is also seen as knowledge which has been formalized. Explicit knowledge is easy to identify, stored and retrieved. These include knowledge assets such as reports, memos, business plans, drawings, patents, trademarks, customer lists and methodology. These epitomize a synthesis of organization's experience kept in form that can readily be accessed by interested parties and replicated if desired. Explicit knowledge is regarded as that knowledge that can be readily articulated, accessed and verbalized. It can be easily transmitted to others, most forms of explicit knowledge can be stored in certain media like encyclopedias and textbooks. Simply put, explicit knowledge is recorded and well documented information that helps in taking action, and also expressed in a formal language [15].

Tacit knowledge is known to be intuitive and hard-to-define knowledge that is largely experience based, because of this, tacit knowledge is often context dependent and embedded in its nature. Sometimes, it is hard to manage and often rooted in action, commitment and involvement. Tacit knowledge is simply a person's ideas, conceptual understanding, expertise, skills, and valued intention among others. It is inherent in the heart or brain. Tacit knowledge is one of the major types of knowledge and if knowledge must be fully generated and utilized, its management ought to be given credence. Explicit and tacit knowledge go concurrently and simultaneously, since explicit knowledge deals on externalized or codified knowledge, one needs the tacit knowledge to be able to comprehend the explicit one and manage it effectively.

Explicit and tacit knowledge play very vital role in managing organizations effectively. In order to give room for explicit and tacit knowledge and its easy access in any organization, the term knowledge management must therefore come to one's mind as this will make institutions and organizations alike to have a knowledge base or store house. Knowledge Management (KM) though defined differently by different authors according to their standpoints, all refer to a deliberate act to collect, store, retrieve and share both tacit and explicit knowledge in an organization.

The origin of KM can be traced to twenty years ago [7]. According to [6], knowledge management is referred to as tools, techniques and strategies to retain, analyze, organize, improve and share business expertise. KM constitutes a technology for information capturing, optimizing, delivering and maintaining information that are of value to the organization [7]. The essence of managing knowledge is to ensure that the organization, firm or institution as the case may be, is acceptably above board in meeting the needs of its primary patrons and at the same time achieving institutional goals/objectives. In line with this, [10] defined knowledge management as a process that assist organizations to find, select, organize, disseminate and transfer necessary information as well as expertise for activities. It is always advisable to ensure that information and expertise within an organization is effectively and efficiently utilized. In bringing this to fruition in order to realize institutional objectives, the term knowledge management must be given its proper position.

From his perspective, [8] has seen the concept of knowledge management as a strategic management of organizational knowledge asset for the sole purpose of realizing aims and objectives. KM according to the author has to do with initiatives, strategies and processes that encourages the generation, storage and sharing of knowledge/information within an organization. To others, KM is seen as a discipline on its own that is targeted at improving the performance of individuals, organizations and in the long run, adding value to whatever job done. KM promotes innovations and also increases productivity and competence. [36], stated that knowledge management is a process that helps identify, select, organize, disseminate and transfer important information and expertise that are part of the organization's memory and that typically resides within the organization in an unstructured manner. They went further to state that through a supportive organizational climate and modern information technology, an organization can bring its entire organizational memory and knowledge to bear upon any problem anywhere in the world and at any time.

To the researchers, knowledge management can be used to mean the collection, exploitation, development and manipulation of the available knowledge assets of a teaching/learning institution with the intention or intent of furthering or advancing knowledge for better performance. [9] stated that knowledge may be accessed through a formal

knowledge base in an organization, the author further used a knowledge base to mean a centralized database in an organization which is used to spread requisite information and data to members of the organization. [10] on his part listed some of the strategies and instruments for managing knowledge which are knowledge sharing, storytelling, cross project learning, after-action reviews, knowledge mapping, expert systems, best practice transfer, knowledge fairs, master apprentice relationship, knowledge repositories, knowledge brokers, inter-project knowledge transfer.

Teachers are to associate with the term knowledge application. This is because of the nature of their job. They are by the nature of their duty expected to teach their students the latest and recent happenings in their field. This primary duty may be thwarted if teachers are not conversant/cannot apply new trends that will boost their performance. Teachers in secondary schools are frequently exposed to knowledge. They ought to see and handle knowledge more sincerely and effectively as KM can be introduced in schools as a way of improving competitive performance.

A teacher otherwise referred to as an educator is simply that person who provides formal teaching or education to pupils or students as the case may be. It could be at the primary, secondary or tertiary levels of education. Sometimes a teacher may pass through some required standards in order to be professionally qualified for the job. [11] defined a teacher in a more professional term as a person trained or recognized and employed to facilitate teaching and learning in classroom situation in order to achieve set goals.

The duty of a teacher is basically formal and on continuous platform, carried out at a school or other places of formal education. Harden and Crosby in [12], stated that the teacher performs basically six tasks which are: information provision, role modeling, facilitating learning, assessing student's performance, planning academic activities and resource development. These he said are central in achieving the objective of secondary education in any country. A teacher is ideally expected to be vast. This is to enable him discharge his functions more effectively and creditably. This could be threatened if knowledge management is not given attention most especially at the secondary school tier of education.

There are experienced and less experienced teachers in our secondary schools today. The definition of experienced teacher seems to hinge principally on the number of years taught, time related can range from 3 years to 10 years or more [13, 14] further stated that experienced teachers manage their classrooms more effectively than less experienced teachers. Knowledge management helps educational institutes to improve their capacity of gathering and sharing information and knowledge and apply these to problem solving and support the research, teaching and continual improvement of their work. KM of the educational system must reflect and comprise information at all levels starting from management level to student level in order to improve professional knowledge of employees to achieve the quality of teachers and students. Knowledge management gives most effective medium to transfer efficient methods, models, ideas and practices, the exchange of information and knowledge in network like mutual newsletters, meetings, conferences, seminars and symposiums can serve as an instrument for knowledge management and good practice [15].

Knowledge identification, acquisition and management start from the schools. Therefore, effective KM practice, awareness and application can go a long way in repositioning the 21st century secondary schools, thereby making secondary school teachers and students not just to be academically sound but also to be ready to provide solutions to disturbing issues. This by extension is to improve and encourage competitive performance. The study therefore focuses on the application and benefits of knowledge management by secondary school teachers in Nigeria. In order to complete this research task at hand, three specific objectives and one hypothesis were carefully formulated to guild this study as would be seen subsequently. Furthermore, series of literature were reviewed, descriptive and inferential statistics method adopted, analysis done, findings revealed and conclusion finally drawn.

2 Statement of the Problem

Knowledge management makes it possible and easy to timely locate and utilize information needed in any organization. Many cooperate organizations have seriously taken advantage of the KM concept. [16] noted that knowledge is presently a core prerequisite for measuring success in any organization, the author further hinted that staff or employees who lack needed/basic knowledge to do their job are likely vulnerable to sack or dismissal. Being reservoirs of knowledge, schools are supposed to be active in projecting or popularizing KM.

Despite the benefits of KM, there appears to be little or nothing done to fully adopt KM in Nigerian secondary schools. This is sequel to personal observations and discussions with some teachers in some secondary schools which indicate that reasonable numbers of teachers are not familiar with the concept of knowledge management. This is very appalling as there are different types of knowledge, which need to be managed in secondary schools. For instance,

knowledge for effective service delivery by teachers, information about students' performance and so on. Knowledge management is not supposed to be jettisoned at the secondary school level as this has a way of intellectually contributing to the students' knowledge base via their teachers thereby developing them at a much younger. This work therefore sought to determine the application and benefits of knowledge management by secondary school teachers in Nigeria.

3 Objectives of the Study

The main purpose of this study is to determine the application and benefits of knowledge management by secondary school teachers in Nigeria. The study specifically sought to determine the following:

1. Level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko-South LGA of Delta State, Nigeria.
2. The benefits of application of knowledge management to teachers in secondary schools in Isoko-South Local Government Area of Delta State, Nigeria.
3. Factors militating against the application of knowledge management by teachers in secondary schools in Isoko-South Local Government Area of Delta State, Nigeria.

4 Hypotheses

The following hypothesis was formulated to guide the study:

1. There is no significant difference in the level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko-South Local Government Area, Delta State of Nigeria.

5 Literature Review

5.1 Application of Knowledge Management by Teachers

It is a common expectation that educational leaders need to be able to lead information-based knowledge management efforts and that as society becomes increasingly information based, teachers, learners, and school leaders are uniquely positioned to play a prominent role in the process of applying knowledge management. A winning knowledge management increases staff productivity, product and service quality, and deliverable consistency by capitalizing on intellectual and knowledge-based assets.

According to [17], mentoring system is a good strategy put in place by secondary school teachers in applying knowledge management, Lee noted that mentoring helps newcomers to learn from experienced teachers. Informal seminars where teachers can interact and exchange ideas, best practices, specific experience and knowledge should be scheduled at regular intervals and at convenient times. The creation of yellow pages which classifies individuals by different areas of expertise into a logical whole and internal cross-training and exchange with other organizations are also recommended for the application of knowledge management in secondary schools by teachers.

It is clear from the above that knowledge management can be applied in secondary schools. However the simple secret of applying knowledge management by teachers lies in connection with people/interaction. In order to ensure that the strategies for KM are applied successfully, [4] hinted that only technology cannot do the job, but further stated that organizations should also consider the following as KM components:

- I. **People:** This represents how you increase the ability of individuals within organization to influence others with their knowledge processes. They involve how you establish best practices and governance for the efficient and accurate identification, management, and dissemination of knowledge.
- II. **Technology:** It addresses how you choose, configure and utilize tools and automation to enable knowledge management work successfully.
- III. **Structure:** It directs how you transform organization structures to facilitate and encourage cross discipline awareness and expertise.
- IV. **Culture:** It embodies how you establish and cultivate a knowledge sharing, knowledge-driven culture. The major 8 steps propounded by [4], for the application of KM are as stated below:
 - 1) Establish KM program objectives: before selecting a tool, defining a process, and developing work flows, you should envision and articulate the end state.

- 2) Prepare for change: knowledge management is more than just an application of technology. It involves cultural changes in the way employees perceives and share knowledge they develop.
- 3) Define high level process: to facilitate the effective management of your organization's knowledge assets, you should begin by laying out a high-level knowledge management process: determine and privatize technology needs
- 4) With such a variety of knowledge management solutions, it is only imperative to understand the cost and benefits of each type of technology and the primary technology providers in the market place.
- 5) Assess current state: a typical assessment should provide an overview of the assessment, the gap between current and desired states, and the recommendation for attenuating identified gaps.
- 6) Build knowledge management implementation roadmap: in putting this application strategy in place, you should reconfirm senior leadership support and commitment, as well as the funding to implement and maintain the KM program.
- 7) Implementation: in implementing a knowledge management program and monitoring the overall effectiveness of your organization will require significant personnel resources, and funding.
- 8) Measure and improve the KM program: how do you know your knowledge management investment is being fully applied? You will need a way of measuring your actual effectiveness and comparing that to anticipated results.

In implementing organizational knowledge management, [18] recommended the use of the push strategy. This strategy encourages individuals to explicitly encode their knowledge into a database, and retrieving knowledge that they need from other individuals which has been provided in the database. This is also known as codification approach to knowledge management. Other techniques compatible with organizational knowledge management as posited by [18] include conducting exit interviews to retiring members to capture knowledge from leavers; setting up knowledge centers for collecting, organizing and disseminating both knowledge and information.

In his submission, [10] stated that knowledge is key to the efficiency and productivity of any organization. This is why organizations are expected to manage it critically and carefully, in doing this, a knowledge management strategy, tested and trusted should be put in place that will attract management team of the organization for its implementation.

In the application of knowledge management, it must be noted that it takes time and money, however the results can be impressive and risks can be minimized by taking a phased approach that gives beneficial returns at each step. Organizations/schools that have made this kind of investment in KM realize tangible results quickly. They add to their top and bottom lines through faster cycle times, enhanced efficiency, better decision making and greater use of tested solutions across the enterprise [19].

Similarly, [20] identified seven steps that should be followed procedurally in the application of KM in schools.

- i. Identify the problem
- ii. Prepare for change, create the team
- iii. Mapping out the knowledge
- iv. Creating a feedback
- v. Defining the building block
- vi. Management system
- vii. Integrating existing information system to contribute and capture knowledge in appropriate format.

The seven steps if followed religiously will no doubt, produce a successful application of KM in schools.

There are quite a number of application strategies that secondary school should consider when dealing with the issues of KM, some of which are: identify tacit knowledge first, start with small team (staff), make all staff feel comfortable about sharing knowledge, make it as easy as possible for members of the organization share information, make plans for the knowledge of retiring members of staff.

[21] argued that KM in secondary schools can be seen as thorough management activities that support the teachers, leaders and administrators of schools to enable them become efficient and effective which can also be directed towards the development of curricula for positive results. According to them, KM can also be applied through repository of analyzed student outcomes and evaluation updated each term for lessons learned and best practices for faculty and also repository of corporate relationship to identify curriculum design, advisory task forces, guest speakers, adjuncts and case study sites.

5.2 Benefits of Knowledge Management

It is an obvious fact that KM is crucial in every organization, this was supported by [22] when they argued that KM is expected to have a significant influence on organizational performance, this is no doubt hinged on the fact that staff of the organization traditionally access, use and share knowledge which helps them to be more productive in their official duties. The role of knowledge management is positively yielding results to both individual teachers and the school organizations. Effective practice of knowledge management ought to be at the heart of every organization which is aimed at fast tracking the realization of organizational objectives. Knowledge management is valuable to schools/organizations that need more effective ways to manage large amount of data.

[23] identified fifteen (15) benefits of knowledge management. According to Stan, all organizations can benefit from their people (employees) sharing, innovating, revising collaborating and learning. Here is a list of 15 benefits as noted by the author.

1. Enabling better and faster decision making

By delivering relevant information at the time of need through structure, search, subscription, syndication, and support a KM environment can provide the basis for making good decisions.

2. Making it easy to find relevant information and resources

When faced with a need to respond to a customer, solve a problem, analyze trends, assess markets, benchmark against peers, understanding competition, create new entering, plan strategy and to think critically, you typically look for information and resources to support these activities.

3. Revising ideas, documents, and expertise

Once you have developed an effective process, you want to ensure that others use the process any time a similar requirement arises.

4. Avoiding repetition of effort

Nobody likes to spend time doing something over again. But they do so all the time for a variety of reasons. But avoiding repetition and duplication of efforts save time.

5. Avoiding making the same mistakes

George Santayana said, "Those who ignore history are doomed to repeat it". If we don't learn from our mistakes, we will therefore experience them over and over again.

6. Taking advantage of existing expertise and experience

Teams benefit from the individuals skills and knowledge of each member. The more complementing the expertise of the team members, the greater the power of the team.

7. Communicating important information widely and quickly

KM helps to curb the problems of information scarcity and information overload.

8. Promoting standard, repeatable processes and procedures

If standard processes and procedures have been defined, they should always be followed.

Other benefits as noted by Stan are;

9. Providing methods, tools, templates, techniques and examples.

10. Making scarce expertise widely available.

11. Showing customers how knowledge is used for their benefit.

12. Accelerating delivery to customers

13. Enabling the organization to leverage its size.

14. Making the organization's best problem-solving experience re-useable.

15. Stimulating innovation and growth.

Knowledge management has been rated to be a major life wire to schools and other allied institutions. With knowledge properly stored and accessed in an organization, innovation and ingenuity become inevitable. According to [24] some of the benefits of KM which are in school setting are: mitigate risk, speed innovation, improve decision making, improve the flow of knowledge, attract and retain talents, encourage a knowledge sharing culture, ability to

manage change, improve and accelerate learning, unleash new ideas and creativity, create a flexible organization and lift productivity and creativity.

There is a growing recognition corroborating the learning organization philosophy that the organizational and social context of learning is an important aspect of knowledge generation and transfer. Thus, knowledge management is predicated on developing individual participation in community of practice [25]. In other words, organizational success is not so reliant on the static 'stock' of knowledge, but rather on the dynamic social processes through which knowledge is enhanced and renewed. Schools need to develop cultures where their members are encouraged to share knowledge in order to gain a strategic advantage.

The significance of KM for organizational success lies in the fact that it aims at enabling an organization to make quality decisions, act intelligently in the utilization of intellectual capital to create maximum value for sustainable development [33].

Knowledge Management is capable of bridging different gaps in order to ensure organizational success. [34] submitted that KM aids in the transformation of relationship between experts and amateurs, poor and rich, educated and uneducated, literate and illiterate, enlightened and ignorant, government and illiterate etc. towards advancement and progress of the nation, society and individual organizations.

To [21], the role of knowledge management will continually be recognized in the area of curriculum development as it ensures enhanced quality of curriculum and programs by identifying and leveraging best practices and monitoring outcomes, improved speed of curriculum revision and updating, enhanced faculty development efforts especially for new faculty, improved administrative services related to teaching and learning with technology, KM also assures improved responsiveness by monitoring and incorporating lessons learned from the experiences of colleagues, student evaluations, and corporate or other constituent input and finally, KM facilitates interdisciplinary curriculum design and development by navigating across departmental boundaries.

The traditional view of knowledge management is centered on enabling the school organization to be more effective by recording and making available what teachers know, and the emphasis in knowledge management research has remained on how to extract knowledge out of people, either by making it explicit and entering it into an information system (or knowledge management system) or possibly more realistically, encouraging teacher employees, as communicative individuals to share knowledge in social and professional situations such as communities of practice. In connection with the above, [26] identify that much of an organization's critical knowledge resides with the employees which if properly managed and shared, leads to total 'liberation' of organizations.

5.3 Problems Militating Against the Implementation of KM in Secondary Schools

KM application or implementation is regarded as a process through which collective knowledge of an organization or members is applied in organizations for the benefit and progress of all. In a bid to implement or apply this knowledge management, there are some problems encountered. [27] listed the ten most important failure factors of knowledge management system implementation as follows:

- Lack of familiarity of top management with dimensions of KM and its requirement.
- Selecting an unsophisticated and inexperienced persons for leading KM team.
- Improper selection of KM team members.
- Wrong planning and improper forecasting for the project.
- Lack of separate budget for KM project.
- Lack of support and commitment of top management.
- Resistance against the change.
- Inability of KM team.

A lot of factors present itself in the KM processes which tend to work against KM implementation in some organizations. [31] opined that the implementation of KM in organizations can be affected by structural/organizational related causes, human related causes and technical related causes. Most organizations according to [28] fail to identify, develop and acquaint and even share or distribute knowledge. The authors further stated that one major challenge of implementing KM is failure to form and develop a culture that embraces learning, sharing, changing and improving knowledge in an organization. This is a serious barrier to KM implementation in most organizations. [32] still believe that the culture of sharing or social interaction is highly discouraged in most organizations because it is viewed as loss labour hour. The discouragement in the sharing of ideas and information in organizations also affect KM implementation in most schools/organizations.

The problems/challenges working against the implementation of KM in schools and other allied organizations are numerous and multi-faceted. To this end, [29] highlighted the barriers of KM implementation which revolve around five factors, namely government, man, environment, management and method.

[30] in his own wisdom grouped the barriers of KM into four. They are:

Barriers in finance

Barriers in content (correctness of information)

Barriers in routines and procedures

Barriers in organization

In quite a similar vein, [43] listed three factors as barriers to KM application which are

- a. There is often insufficient incentive for staff
- b. The staff may feel very reluctant to share knowledge externally
- c. The staff of the organization may be reluctant to admit and learn from their failure because of the need to compete with others

Still outlining the challenges/barriers/problems of KM, [32] enumerated about seven (7) points which are, inadequate funding, inadequate professional staff, shortage of technological facilities, inadequacy of incentives, irregular payment of salaries, no capacity development programmes and no cooperation among staff.

[45] noted that a number of researchers have identified problems of knowledge management to include but not limited to lack of trust among staff, poor leadership, absence of strategic planning, lack of organizational culture and others. In a similar vein, [34] said incentives and training are the biggest motivators in knowledge management practice. According to him, the absence of proper incentive plans makes teachers to observe reluctance towards knowledge management activities while adequate training plans in all the activities of knowledge management process facilitates success of organizational knowledge management.

Conclusively, it has been pointed out from the above literature review that knowledge management can either be applied in schools or not applied, if not applied for instance; this may lead to devastating effect in such learning institutions. On the one hand, the researchers reviewed the various benefits accrued to effective management of knowledge in any learning institution. On the other hand, the problems associated with the implementation or applications of knowledge management were also x-rayed. The data that would be collected from the field will therefore put finishing touches as par whether teachers in Nigeria apply knowledge management, if there are benefits in applying knowledge management and also if they get benefits when they fully adopt KM in their learning institutions.

6 Method

Descriptive survey design was adopted in this study. The descriptive survey design according to [35] refers to study which aim at collecting data on and describing in a systematic manner the characteristic features or facts about a given population. The study was conducted in Isoko South Local Government Area of Delta State, Nigeria. Isoko South is made up of twenty six (26) communities. The inhabitants of Isoko South of Delta State are predominantly farmers thus the area is referred to as agrarian society with a common Isoko language. The population for this study was 283 consisting of all categories of secondary school teachers in public schools in Isoko South Local Government Area, Delta State ,Nigeria. Total enumeration sampling was used since the population is manageable. Therefore the two hundred and eighty three (283) teachers in the public secondary schools were involved in the study (that is census sampling method.

The data collected were analyzed using arithmetic mean and standard deviation for all the research questions (descriptive statistics). The structured questionnaire was adopted as instrument for data collection. The questionnaire consisted of four sections. Section one was on the demographic characteristics of the respondents which include respondents' gender, age range, institutional affiliation and years of work experience. Section two to four elicited data from the respondents in accordance with the objectives of the study. Items for each of the sections were generated based on review of literature and researchers' prior experience on the application and benefits of knowledge management to teachers. The responses for each of the constructs were based on four point Likert scale with scoring points ranging from four to one. After the four weeks allocated for data collection, the researchers were satisfied with the response rate. The survey response summary shows that 283 teachers participated in the study. The data were retrieved and analysed using descriptive statistics of table, frequency, percentages, mean, Standard Deviation (SD) and inferential statistics.

The research questions were calculated thus:

| | |
|---|-------------|
| Very High Level (VHL)/Strongly Agree (SA) | 3.50 - 4.00 |
| High Level (HL)/Agree (A) | 2.50-3.49 |
| Low Level (LL)/Disagree (D) | 1.50-2.49 |
| Very Low Level (VLL)/Strongly Disagree (SD) | 1.00-1.49 |

A higher value was indicated as positive response than a lower value. The mean of the points is 2.50 ($(1+2+3+4)/4=2.5$).

The hypothesis was tested at 0.05 level of significance using *t*-test statistical tool (inferential statistics). The decision rule for testing the hypotheses was based on the following: Accept Null Hypothesis (H_0) if the *p*- value (2 tailed) is greater than the alpha value (0.05). Otherwise, do not accept Null Hypothesis (H_0). Mean and standard deviation as well as *t*-test was computed for the study using SPSS version 23.0.

7 Data Analysis

This part deals with the presentation, analysis and interpretation of data collected for the study. The data were collected and analyzed based on the research questions and hypothesis that were formulated for this study. A total of 283 copies of questionnaire were administered to teachers but only 244 copies of questionnaire were duly completed and returned. This indicates 83.22 %, and analysis was based on this number that was collected.

The mean and standard deviation of the level of application of knowledge management of both experienced and less experienced teachers in secondary schools (VHL – Very High Level; HL - High Level and LL – Low Level).

Table 1: Level of application of knowledge management by teachers

| Level of application of knowledge management by secondary school teachers | \bar{X} | SD | Remarks |
|---|-------------|-----|-------------------|
| Identifying and sharing knowledge with colleagues | 3.51 | .61 | VHL |
| Holding staff meetings and workshops to seek knowledge | 3.32 | .83 | HL |
| Organizing informal seminars where staff will have an open interaction | 3.09 | .97 | HL |
| Telling stories to improve individual knowledge | 3.01 | .78 | HL |
| Keeping inventory and index of expert knowledge possessed by members of staff | 2.90 | .89 | HL |
| Using ICT for collection and dissemination of information | 2.52 | .68 | HL |
| Engaging in mentoring activities to less experienced teachers | 2.24 | .70 | LL |
| Interviews conducted at the point of retirement | 1.73 | .91 | LL |
| | | | |
| Grand Mean | 2.79 | | High Level |

Table 1 shows that, one out of the eight items indicated that respondents applied knowledge management to a very high level with a mean score of 3.51. Items 2, 3, 4 and 5 with mean scores ranging from 3.32 to 2.52 show that respondents applied knowledge management to a high level and the remaining two items with mean scores of 2.24 and 1.73 indicated that respondents applied knowledge management to a low level. The grand mean score of 2.79 showed on the whole, that teachers applied knowledge management to a high level. The standard deviations for all the items are within 0.61 to 0.97. This shows that the respondents are not wide apart in their ratings.

Research Question 2: What are the benefits of application of knowledge management by teachers in secondary schools in Isoko-South LGA of Delta State?

Data relating to this research question are analyzed and presented in Table 4.

The mean and standard deviation of the benefits of application of knowledge management to teachers in secondary schools.

Table 2: Benefits of application of knowledge management to teachers

| As a teacher, knowledge management: | \bar{X} | SD | Remarks |
|--|-------------|-----|----------------|
| facilitates use/reuse of knowledge | 3.74 | .67 | Strongly Agree |
| stimulates innovation and growth | 3.68 | .91 | Strongly Agree |
| enhances organizations knowledge based on decision making | 3.48 | .62 | Agree |
| encourages knowledge sharing culture | 3.41 | | Agree |
| gives room for constant organizational learning | 3.26 | .60 | Agree |
| helps teachers and school to stand tall in times of change | 3.18 | .90 | Agree |
| makes scarce knowledge widely available | 2.94 | .82 | Agree |
| Grand Mean | 3.39 | | Agree |

Table 2 reveals that, two out of the eight items listed with mean score of 3.68 and 3.74 indicated that respondents strongly agreed there are benefits of application of knowledge management while the remaining six items with mean scores ranging from 3.48 to 2.94 indicated that respondents agreed there are benefits of knowledge management. The grand mean score of 3.39 showed on the whole that teachers agreed there are benefits of application of knowledge management. The standard deviations for all the items are within 0.60 to 0.91. This shows that the respondents are not wide apart in their ratings.

Research Question 3: What are the factors militating against the application of knowledge management by teachers in secondary schools in Isoko South LGA of Delta State?

Data used to answer this research question are analyzed and presented in Table 5.

The mean and standard deviation of the factors militating against the application of knowledge management by teachers in secondary schools.

Table 3: Factors militating against the application of knowledge management by teachers in secondary schools in Isoko-South Local Government Area of Delta State, Nigeria.

| Factors militating against the application of knowledge management by teachers | \bar{X} | SD | Remarks |
|--|-----------|-----|----------------|
| Lack of budget for knowledge management project | 3.86 | .72 | Strongly Agree |

| | | | |
|---|-------------|-----|----------------|
| Lack of support and commitment of top management | 3.78 | .94 | Strongly Agree |
| Poor incentive for staff who share knowledge with colleague | 3.56 | .66 | Strongly Agree |
| Poor knowledge sharing culture | 3.46 | .85 | Agree |
| Absence of capacity building programmers | 3.35 | .74 | Agree |
| Resistance to change among colleagues | 3.05 | .69 | Agree |
| Lack of co-operation among staff | 2.87 | .91 | Agree |
| Difficulty in expressing tacit knowledge | 2.73 | .80 | Agree |
| Improper selection of knowledge management team | 2.69 | .82 | Agree |
| Irregular payment of salaries | 2.61 | .59 | Agree |
| Grand Mean | 3.20 | | Agree |

Table 3 reveals that, three out of the 10 items listed with mean scores ranging from 3.56 to 3.86 indicated that respondents strongly agreed that there are factors militating against the application of knowledge management while the remaining seven items with mean scores ranging from 2.61 to 3.46 indicated that respondents agreed there are factors militating against the application of knowledge management. The grand mean score of 3.20 showed that on the whole, teachers agreed there are factors militating against the application of knowledge management. The standard deviations for all the items are within 0.59 to 0.94. This shows that the respondents are not wide apart in their ratings

8 Hypothesis

H₀₁: There is no significant difference in the level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko South Local Government Area.

The data in table 4 are used to test this hypothesis.

Table 4: *t*-test showing the level of application of knowledge management by experienced and less experienced teachers in secondary schools.

| Variable | N | Mean | SD | df | P-value | A-value | Remark |
|------------------|-----|-------|------|----|-----------------|---------|--------|
| Experienced | 156 | 44.81 | 1.76 | | | | |
| | 242 | 0.53 | 0.05 | | Not Significant | | |
| Less experienced | 88 | 44.29 | 2.70 | | | | |

Table 4 reveals that P- value of 0.53 is greater than the Alpha-value of 0.05 ($0.53 > 0.05$) at 242 degree of freedom, therefore the null hypothesis was accepted. This means that, the level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko South LGA does not differ significantly based on their work experience.

9 Summary of Major Findings

Based on the analyses, the major findings that emerged from the study are summarized as follows:

1. The level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko-South Local Government Area of Delta State is high despite two negative responses. At alpha level of 0.05, the hypothesis two is not rejected (accepted) therefore, there is no significant difference in the level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko-South Local Government Area of Delta State.
2. The benefits of application of knowledge management by teachers in secondary schools in Isoko-South Local Government Area of Delta State cannot be overemphasized, teachers agreed to all benefits listed.

3. Factors militating against the application of knowledge management by teachers in secondary schools are numerous ranging from improper selection of knowledge management team to lack of budget for knowledge management project among others.
4. The level of application of knowledge management by experienced and less experienced teachers in secondary schools in Isoko South LGA does not differ significantly based on their work experience.

10 Conclusions

Conclusively, it has been pointed out from the literature that knowledge management can either be applied in schools or not applied, if not applied for instance; this may lead to devastating effect in such learning institutions. On the one hand, the researchers reviewed the various benefits accrued to effective management of knowledge in any learning institution. On the other hand, the problems associated with the implementation or applications of knowledge management were also x-rayed. The data collected showed that knowledge is very important in schools and personal life which helps to reform and recreate the mind. Based on the findings of the study, teachers in secondary schools in Isoko South LGA of Delta State apply knowledge management to a high level among their colleagues. Their knowledge management behavior is firm owing to the fact that they share knowledge with their colleagues and they usually participate in academic discussions that do benefit them.

11 Recommendations

Based on the findings and the conclusion reached in this study, the following recommendations were made:

- (1) All categories of teachers' trainers should ensure that the concept of knowledge management is captured in teachers' curriculum. This is to consistently boost their awareness level and application of knowledge management.
- (2) School authorities should have an open door policy of information system in order to boost the level of knowledge sharing behaviour and management among staff of secondary schools.
- (3) Government should continuously organize seminars and conferences for teachers in areas of knowledge management in order to motivate them to apply knowledge management practices in secondary schools.

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