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TECHNOLOGICAL INNOVATION MANAGEMENT AND THE TEACHING OF HEALTH EDUCATION AT THE BASIC EDUCATION LEVEL IN CALABAR MUNICIPALITY: PROSPECTS AND CHALLENGES.

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Abstract
The main thrust of this study was to investigate technological innovation management in the teaching of health education at the basic education level in Calabar Municipality. To achieve the objectives of the study, two (2) research questions were formulated and answered. Literature review was carried out in line with the variables of the study. A sample of one hundred (100) respondents were purposively selected from the population comprising of all health education teachers at basic education level in the area. The selection was done using purposive sampling technique with the questionnaire as the instrument used for data collection. Simple percentage was used for the data analysis. The result of the analysis revealed that to a large extent technological innovation advancement can influence health education teaching and learning in basic education level. Based on the findings of the study, it was recommended that the government and educational stakeholders should always hold periodic seminars, symposiums, workshops and lunch parties to train health education professionals on how to use technological innovative advancement devices so as to be able to teach health education at basic level with minimal technical challenges.

Keyword: Technological, innovation, management, advancement, health education, basic education.

Introduction
Technology has come to stay from the look of things and if properly managed would go a long way to help health education advancement both in rural and urban areas, as well as lower and higher institutions of learning. Health education is being learned as a subject or offered as a professional course in our lower and higher institutions of learning. This technologically innovative outlook will help to promote proper understanding of the teaching of health education in schools and also help to bring about the promotion of healthy habits as well as inculcation and sustainability of them by members of our contemporary society.

Basic education, is education given to children between ages six to fifteen (6-15) to prepare them for functionality in the society (Udida, 2015). To achieve this aim of functionality, health education must be properly disseminated, assimilated and properly understood. Today's generation is definitely a world plunged into darkness without the use of technology, especially the world of students who are faced with every day opportunities to use, explore and manipulate technological devices to their own educational advantage. Through google they have access to a

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wide wealth of digital information, content and resources which all culminate into deep insight, understanding and proper functionality in different spheres of endeavours.

Brooks (2014) opined that this generation of "digital natives" has much lower need for libraries of physical content. By implication the traditional resources used by students half a generation ago alongside learning styles are changing and more teaching professionals are still learning to adapt their teaching styles accordingly. Parker (2014) is of the view that the effect of technological innovation on the advancement of health education most especially has brought about the following detailed effects in the lives of contemporary students and the society as a whole:

1) Solo or group brain storming engagement.
2) Self or group motivation.
3) Self or solo detail exploration and exposure.
4) Independent learning (solo learning).
5) Parental engagement or family involvement in teaching and learning experiences.
6) Enhancement of attention span because of the involvement of audio and visual aids of learning.

This technological innovation effect also births a very strong need for prospective teachers to rapidly adopt benefitting teaching styles that will trigger more interactive connection between them and their students in the classroom most especially in the teaching of health educational curriculum contents.

Technological innovation management in teaching health education has gone a long way to help salvage geographically disadvantaged students as technology tends to answer the question of distance barriers and bridges the gap between urban and rural occurrences through simplified and explanatory topics, themes and write ups that explain in details the existent health related phenomenon.

Agara (2015) is of the opinion that schools serving higher resourced families who are often able to recruit better teachers and administrators, tend to have more access to the teaching of health education practices, but technology has no preferences for such schools, because with the same internet access and cost, in the same area irrespective of different locations or student population, students or learners can now access online educational videos, cartoons and presentations taught about inevitable health education topics such as, personal hygiene, environmental hygiene, mental hygiene, personal health and physical fitness, concept of health education or school health programmes, health care delivery for school children and societal health needs at large and so on.

Erickson (2014) stresses that teachers are at liberty to engage in multitasking learning while giving tutorials because students can go online and access videos that provide instruction on wide variety of topics at their various skill levels or participate in real time video conferences with teachers or tutors located within their states or even a continent away. Nell (2014) also explained that technological effect on the study of health education has helped younger learners a great deal because with the evolution of touch-screen technological innovation which has

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enabled very young children to engage in technological aided instructions on their tablets. Prior to this time, it was difficult for pre-school/kindergarten and even early primary grade students to understand very well certain core concepts of health education, but now with the aid of visuals they are able to see or watch videos, play health related games which go a long way to broaden their understanding of basic concepts of personal hygiene, environmental hygiene, good table manners and so on.

Technological innovation management has helped professional health educators to be able to categorize their teaching instructions into four (4) categories:

1. Steps for slow learners
2. Steps for average learners
3. Steps for fast learners
4. Steps for highly intelligent learners

All of these put together have helped the teaching and learning process less strenuous and cumbersome for both the teachers and their students (Matthew, 2015).

Brooks (2014) in a study carried out a study to access the effect of technology on student's understanding of health practical teaching methods. It was revealed that teaching schemes do not only give teachers opportunities to categorize instructions but also helps them assess pupils or students' current weaknesses then diagnose why it is so as well as seek ways to proffer solution to the problem. This shows that the understanding of health education is hinged on technological application and innovation.

Rexson (2014) identified the following as the possible challenges confronting technological innovation in the teaching of health education:

(i) Poverty: Even if the trend of technology is moving in fast lanes, there are some parts of contemporary society that will not be able to meet up because they are lowest at the strata based on their low-income rate. Due to this fact, many of the students will not be able to access technological devices or afford to own one and these will pose as a big challenge to the teacher in disseminating of health educative information and the assimilation of such health-related information by these categories of learners.

(ii) Illiteracy: The level of education of an individual will also help that individual understand proper functionality of devices using technology. So, without a certain level of education, individuals who are disadvantaged will find it difficult to use or operate such technological devices.

(iii) Language barrier: Although most technological innovation devices use detailed information or instructions which are being interpreted into different languages, not all existent languages and dialects are usually captured, hence individuals or students who do not understand selected languages such as English, Dutch, French, Swahili, Africans, Spanish etc, which are the selected coded languages used for information dissemination in such technological devices will be at a disadvantage to the learners making it more difficult for health education professionals to disseminate information to them.

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Gasam, (2015) in a study carried out to find out challenges of technological innovation in the teaching of health education to students, discovered that one major challenge of technological innovation of health education is students' motivation. Indulgence in technological aided health tutoring often reduced oversight of students, and this could be particularly detrimental for children who are less motivated or who receive less structured educational supports at home. Furthermore, he also found out that 65% of these technological innovation applications are often times less able to engage reluctant learners in the way a dynamic and charismatic teacher should do.

Moreover, approaches that forgo direct interpersonal interaction completely are most unlikely able to teach certain skills because learning is an inherently social activity. While an intelligent tutor might be able to help a student master specific Mathematics or English concepts, it may not be able to teach students to critically analyze a work of literature or debate the ethics of new legislation.

Most broadly, it is important to realize that technologies can be either substitutes for or complements to already existent resources in the school. Technological innovations are not in themselves structured to give both teachers and learners all they need to be able to interact properly. Rather they are to be seen as complements to already existent facilities, equipment, resource rooms, fields, laboratories, the school environment as a whole and they also require seasoned school administrators, skilled teachers and students as well (Jessy, 2014).

The world is going digital educationally, but in Nigeria there is a lag in this respect owing to inadequate information about technological innovation and lack of infrastructural management. The inability to provide adequate technologically innovative devices, that will cater for the needs of both students and teachers of health education, as they both synchronize in the classroom environment to participate in the teaching and learning procedures of health education irrespective of their population or numbers. In this study efforts would be made to find out if technological innovations are required in the teaching of health education at the basic education level?

Aim and objective

The aim of this study was to examine the role of technological innovation management in the teaching of health education at basic education level.

Specially, the objective of the study was to:

1. Identify how technological innovation management influence the teaching of health education at the basic education level.

Research question

1. To what extent does technological innovation management influence the teaching of health education at the basic education level?

Methodology:

The survey research design was adopted for the study. The population of the study comprised of 127 health education teachers at the basic education level in Calabar Municipality Local

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Government. Purposive sampling technique was used for sample selection. A sample of 100 health education teachers were purposively selected as respondents for the study. The study area was Calabar Municipality Council of Cross River State which is located at the Southern Senatorial District of the state. It has an area of 142km2 and a population of one hundred and seventy-nine thousand, three hundred and ninety-nine (179,392) people as at the 2006 census.

The instrument used for data collection was a questionnaire titled Technological Innovation Management and the Teaching of Health Education Questionnaire (TIMTHEQ). Simple percentage was used to answer the research questions. The items in the questionnaire were validated by research experts in the subject area as well as measurement and evaluation lecturers. The reliability of the instrument was established using the test-re-test method and the co-efficient of .76 and .83 respectively was obtained on the two sub variables being studied.

Results

Table 1:

Technological innovations management in the teaching of health education at the basic education level N = 100

S/N	ITEMS	YES	%	NO	%
1.	The use of technology is relevant to the teaching and learning of health education?	72	72.0	28	28.0
2.	The use of technology helps in better understanding of health education?	65	65.0	35	35.0
3.	Concepts are understood in Health Education more clearly with health-related videos	71	71.0	29	29.0
4.	Technological devices help both teachers and students have a better understanding of health education as a subject?	82	82.0	18	18.0

Item 1, 2, 3, 4 were responsible for research question one. The data presented simply indicated that out of 100 (one hundred) respondents to the item, number one, 72 representing 72.0% said "Yes" to the item as against 28 representing 28.0% who said "No".

Item 2 which dealt with the feeling that technology helps in better understanding of the subject health education had 65 respondents saying "Yes" representing 65.0% as against 35% saying 'No".

Item 3 has to do with the understanding of concepts in health education more clearly through the watching of health-related videos. 71 respondents representing 71.0% said "Yes" as against 29.0% saying "No".

Item 4 has to do with the use of technological devices as it helps both teachers and students have a better understanding of health education as a subject, 82 respondents representing 82.0% said "Yes" as against 18% indicating "No". The results of the analysis indicate that the percentage of agreement for all four items is higher than 50%. This result therefore signifies that technological innovation management could enhance the understanding of health education at the basic education level.

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Discussion

The result in table 1 of the study revealed that technological innovation management in teaching health education at the basic education plays a vital role in teachers/students dissemination, assimilation and understanding of health related concepts. This is in line with the findings of Nell (2014) who is of the opinion that technological effect on the study of health education has helped younger learners a great deal because with the evolution of touch-screen technology, it has enabled young children to engage in technological innovative aided instruction on their tablets. This is evidenced in the fact that prior to this time, it was difficult for preschool, kindergarten and even early primary grade students to understand very well certain very core concepts of health education, but now with the aid of visuals they are able to see or watch videos, play health related games which go a long way to broaden their understanding of basic concepts of personal hygiene, environmental hygiene, good table manners and so on.

The result is also in agreement with the works of Brooks (2014) who asserted from a study carried out to access the effect of technology on student's understanding of health practices. It was discovered that technologically innovative teaching schemes do not only give teachers opportunities to categorize instructions but also help them assess pupils or students' current weaknesses and diagnose why it is so as well as seek ways to proffer solution to the problem.

The result went further to agree with Gasam (2015) who carried out a study to find out challenges of technological innovation in the teaching of health education discovered that one major challenge of technological innovation advancement of health education is student motivation. That indulgence in technological aided health tutoring often reduces oversight of students, and this could be particularly detrimental for children who are less motivated or who receive less structured educational support at home. Therefore, the results indicates that there are ways technological innovation management could become a challenge to the teaching and understanding of health education at the basic education level.

Conclusion

Today, with the explosion of technology and very easy internet and media access that comes with it, the question more than ever is what is the impact, effect and result on our children in the society undergoing schooling at the basic education level? Most especially in regards to their better understanding of education as a whole and with specificity to health education as it impacts on their general well-being. Children undergoing basic education are of different ages and size so technological innovation advancement as it concerns health education could be processed and understood in different ways depending on their literacy levels, attention span, method of information processing. Also, the amount of mental effort they put in or are willing to invest and the level of operational knowledge of their tutors of these technological devices.

From this study, it was noted that technological innovation management has an effect on the teaching of health education at the basic education level with corresponding prospects and challenges. It is therefore concluded that the ages of the children, their attention span and readiness to learn should be taken into consideration when programming health education applications into technological innovation devices. Also the government at all levels, schools, religious organizations and communities at large should endeavour to encourage involvement of

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health education practical cultures via their teachings as this will go a long way to help enforce already learned theoretical health related educational concepts. This will in turn be translated into practical involvement and proper understanding by these students of basic education level and members of the society as a whole.

Recommendation

The following recommendations were made to back up the study:

1. Government and educational stakeholders should make sure they provide technological devices with programmed application that will aid teachers to teach health education students effectively.
2. The government and educational stakeholders should always hold periodic seminars, symposiums and workshops to train health education professionals on how to use technological innovative devices so as to be able to teach health education with minimal technical challenges.

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