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GENDER DIFFERENCE IN THE USE ELECTRONICALLY MEDIATED INSTRUCTIONS AMONG CHEMISTRY TEACHERS IN OGIDI EDUCATION ZONE

Pius Promise Obinna, Odukwe Chinelo Ogochukwu; Onuigwe Blessing Ukamaka

dr.promisepius850@gmail.com, oc.odukwe@unizik.edu.ng,bu.onuigwe@unizik.edu.ng
Department of Science Education, Nnamdi Azikiwe University, Awka

ABSTRACT

Gender difference over the past decades has continued to attract attention from developed country and underdeveloped countries. This gender difference has thrown man male and female, boys and girls into confusion. There is a great challenge in gender difference that if not properly addressed may leave many female behind in an increasing global world development. This study investigated the gender difference among chemistry teachers in Ogidi Education Zone of Anambra State .The study adopted survey design, the population of the study comprised of 15 Chemistry teachers teaching senior secondary 2, 8 male and 7 female and it was also used as the sample size. The instrument Teachers' use of electronic media (TUEM) was validated and used for data collection from the respondent. Mean and standard deviation were used to answer research questions while the simple t-test was used to test the hypotheses stated. The findings of the studies reveals that Chemistry teachers do not significantly differ in their use of electronically mediated instructions on the basis of gender. The study concludes that, gender is not a factor in the teachers' use of electronic media for teaching Chemistry, students can do better in their studies when needed is given to them. The study recommend that the use of electronic media should be encouraged in the secondary schools to enhance the understanding Chemistry by male and female teachers.

Keywords: Gender, Electronic Media and Chemistry Teachers.

Introduction

Education is defined as any process by which an individual gains knowledge, character and insight or develops attitudes or skills. Education is regarded as consisting of all knowledge and skill acquisition processes that go on in the society to enable young and potential members develop intellectual, emotional and most important scientific skill which is acquired through the study of science. Education is the bedrock of human development which involves acquiring literacy and numeracy, being proficient and the ability to live in the society. Education in basic science include; chemistry, physics and biology. The teaching of these subjects in any level required that students be exposed to some stimulation using teaching resources. Adekunle (2008) noted that teaching resources means anything that can assist the teacher in promoting teaching and learning. Thus in Chemistry, these resources could include things that can allow students learn Chemistry through making use of sense organs on the available materials provided. Such learning materials are regarded as instructional materials. The instructional

materials when properly used by the teachers, provided students with the necessary

Supports for easy teaching and learning and as well motivate students to learn more. Okobia (2011), maintained that the use of electronically mediated instruction to replace traditional face to face classroom interaction has resulted to active learning process and students centered as the responsibility of learning shift from teacher to student and therefore the teacher act as facilitator, resource guide and motivator. This is evidence that when Chemistry teachers use electronically mediated instructions in teaching will promote cooperative learning and not only that, but allow students work independently on the knowledge gained. This electronically materials include, slides projector, still pictures, programmes instruction, map, film strips, chart, graphs, interactive white board and many more. There is need to empower education in Nigeria especially in the rural areas for us to have a sustainable development in education that will meet the needs of the present and future.

The Wikipedia (2023) defined sustainable development as organizing principles for meeting human development goals. Sustainable development is about finding a better way of improving, doing things for present and future. Thus, it calls for change in the way we think, work, act, and live for now and not necessary reducing the quality of one's life style. It also involves creating skills for problem solving, making better decision on issues that affect the lives of citizens. There is every need to incorporate new teaching resources in our educational classroom, particularly in the science subject like Chemistry. Education empowerment build human resources and it helps to bring peace and harmony among individual.

Chemistry education therefore becomes engine of sustainable development and key to a better world as it aims at providing learners with skills that will enhance their individual potentials through science process, enforce self-sufficiency and improve quality of live which helps to build more sustainable societies and nations at large. Achieving this will require that Chemistry teachers need to change their way of teaching, and at the same time integrate electronically mediated instructions in the classroom, as this will change their ways of teaching from old traditional (conventional) method to innovative and interesting ways of learning.

Teachers are nation builders as they remain the veritable tool in teaching and learning. They organize lesson, manage students, materials and time allotted for the lesson. As they deliver their lessons they also check the progress to the their lesson delivery by evaluating the students' performance using assessment tools like, take home, assignments, class exercise and termly examination. Marzano,Picking & Pallock (2001) asserted that the functions of effective teacher include wise selection of the most effective instructional strategies to employ, designing classroom to facilitate students learning as well making effective use of classroom management techniques. Thus the more the effective use and management of instructional materials by the teachers in the classroom, the more effective the instructions will be in the lives of the learners. It is therefore, the duty of a teacher to choose

among the instructional materials the one that will make their lesson delivery effective, convenient and interesting to the learners.

The use of information, communication and Technology (ICT) is known to be effective and convenient to teachers especially those that are ICT compliance. Today, we are living in an information, communication and technology world, and nowadays teachings is technology driven, and interesting class will require that the teacher should integrate electronically-mediated instructions in the teaching and learning process as ICT has become so important of education process and in handling of instructional materials in the classroom. Every learners, be it male or female should as well be developed with ICT skills.

Gender, as an enduring characteristic of students, also important variable could produce difference in individuals. Gender is associated with identity, expression, presentation, tradition, culture, relationship and structure among other things. Singh (2011) defined gender as social attributes and opportunities associated with being male and female and relationship between woman and man, boy and girl. Gender determines what is expected, allowed and valued in a woman or in a given context. Gender has been found to produce difference in human beings. Gender is one of the universal dimensions on which differences are based. This is because men and women are also "specialized" for different tasks (Dholakia, Dholakia & Kshetri, 2013). Asserting that scientific research frequently concludes that men and women exist on different areas, Viegas (2013) identified some gender difference backed up by science. These includes the fact that men have better judgment of a person's size based on their voice just as they have better spatial awareness. More so, men handle lack of sleep better than woman do. On the other hand women are better in locating specific items and better as worrying, gossiping, detecting colours better than men do. However, both males and females have been found to be evenly matched or multi-tasking and in terms of intelligence.

In a related manner, it was observed that in United State of America and Australia, men and women used electronically-mediated instructions in nearly equal measures, whereas in Japan and China, men continue to dominate the use of electronically mediated instructions. (Singh 2011). In relation to gender, Sherman (2000) investigated the internet gender gap among college and students by comparing the usage pattern and attitude of three college students in 1997, 1998 and 1999 respectively. The study showed that differences continue to exist between men and women in how they experience electronic media in teaching and learning. However, studies by Kargen, Schumcher and Delichi (2000) on gender usage of internet among female and male teachers in institution of higher learning in Georgia, Hawali. New Jersey, Massachusetts and Rhode Island found that the difference (gaps) in use of internet has nearly stopped. From these studies it is obvious that in some cases women are lagging behind in the use of electronically mediated instruction such as the internet than men while in some cases, the women are prevailing.

Statement of Problem

There is clear evidence that teachers use electronic media such as internet, phones, interactive white board, projectors, among others. This is because every school has now brings internet, computer and other ICT instructional materials to classrooms. Students also lean computer science in their junior classes and Data processing in their senior classes. It is therefore expected that every should have a good knowledge of ICT as they are expected to teach the younger ones in skill acquisition, they should not only use electronic media such as computer, printer, internet facilities, projectors, phones and other not only for fun but to help develop skills in their students. Otherwise there will be poor and ineffective communication of instructions between the teachers and the learners. However, due to gender difference, there is tendency of having differences as regards to how male and female teachers use their individual skills in the classrooms which will as well reflect in their individual academic output. One would like to know if Chemistry teachers use electronic media to facilitate student's learning and how does gender difference affect the use of electronic media for their individual academic output through effective skill development in their students. Thus, this study set to investigate the use of electronic media by Chemistry teachers in the use of electronic mediated instructions for sustainable development. The purposes of the study are as follow:

i. To investigate if there is difference between male and female Chemistry teachers who use of electronically mediated instructions.
ii. To determine the extent to which chemistry teachers use electronic mediated instructions.

Research Questions

i. What is the difference in the mean use of electronically mediated instruction between male and female chemistry Teachers?
ii. To what extent do chemistry teachers use electronically mediated instructions in their classes?

Hypothesis

The following null hypothesis was tested at 0.05 level of significant

HO: there is no significant difference between the mean usage of electronic media of male and female chemistry teachers.

Research Method

The study adopted a survey research design. The population of the study comprises of all the 15 teachers (8 males and 7females) teaching chemistry in Ogidi Education Zone of Anambra Stat and it is also used as sample. The instrument used was Teachers use of electronic media (TUEM) and was used to collect data from the respondents. The TUEM comprise of 15 items with 5 options of Strongly Agree (SA) Agree (A) Undecided (U) and Strongly Disagree. It consist of two part the A and B. Part A sought information about the respondent personal data, while part B sought information about teachers use of electronic media

in teaching of chemistry. The TUEM was administered to chemistry teachers in the selected school. Data collected were sort out by gender to answer, data collected were sort out by gender to answer the research question and to test the hypothesis stated. The TUEM were validated by two experts in Chemistry education and the reliability of the CUTEM was estimated using Cronbach alpha which yield reliability Co-efficient of 0.89. The research questions were answered using mean and standard deviation, while the hypothesis was tested using t-test.

Presentation of Results

Research question 1: What is the difference in the mean use of electronically mediated instruction between male and female chemistry teachers?

Table 1: Mean and SD of Male and Female Chemistry Teachers Use of Electronically Mediated Instruction.

Group	N	X	X	SD	Mean dif
Male	8	150	18.73	3.04	
					1.18
Female	7	123	17.57	3.80	

Table 1: shows the mean and SD of male and female chemistry teachers use of electronically mediated instruction in the teaching and learning of chemistry. The table shows the mean of males to be 18.75 and female to be 17.57 with standard deviation of 3.04 and 3.80 respectively.

The also present the mean difference male and female chemistry teachers use of electronically mediated instructions as 1.18.

Research Question 2: To what extent do chemistry teachers' use electronically mediated instructions in their class?

Table 2: Extend of Male Chemistry Teachers Use of Electronically Mediated Instructions

Media	No of Participant	percentage
Facebook	02	13.33
2go	07	46.67
WhatsApp	06	40.00
Esimi	01	6.67
Twitter	0	0.00
We chat	0	0.00
Computer	10	66.67
CD-ROM	06	40.00
Overhead projector	09	60.00
Television	02	13.33
Radio	02	13.33

Table 2 shows the percentage usage of electronic media by chemistry teachers. The table shows that ten out of fifteen teachers representing 66.6% indicate that they use computer to deliver chemistry teaching while nine while shows that they also use overhead projectors, representing 60.00% on the other hand none of the teachers indicate that he or she use online chat such as Twitter and we chat to teach chemistry, while only few 40.00% and 6.00% show that they use whatsApp and eskimi.

Hypothesis: There is no significant difference between the mean usage of electronic media of male and female Chemistry teachers

Table 3: Simple T-Test of Male and Female Chemistry Teachers Use of Electronically Mediated Instruction

Gender	N	X	X	SD	T	Sig (2tail)
Male	8	150	18.75	3.04		
					3.95	0.06
Female	7	123	17.57	3.81		

From table 3: shows the simple t-test of male and female Chemistry teachers' use of mediated instruction. The table shows t= 3.95 at p=0.06, >0.05 it shows that there is no significant difference in the use of electronically mediated between male and female chemistry teachers. Therefore, the null hypothesis was not rejected.

Discussion of Findings

The study investigates gender difference in the use of electronically mediated instruction among chemistry teachers. From the finding, it revealed that male and female chemistry does not differ significantly in their use of electronically mediated instructions. Table 1 shows the mean of male and female

chemistry teachers as 18.75 and 17.57with the difference of 1.18.This means that despite the Difference in mean between male and female in their use of electronically mediated instruction, the difference is not significant. Table 3 also shows that t=3.95 at p=0.06, > 0.05, which again shows that there is no significant difference exist between male and female chemistry teachers in their use of electronically mediated instruction. This is in line with the assertion of Singh (2011) who revealed that men and women use electronically mediated instruction nearly equally in countries such as America and Australia. However, the of the study contradict the findings of Sherman (2000) whose study revealed a significant difference between male and female in their pattern and internet usage among college student. This consistent with that by Achor, Kyado and ityobee (2020) that sought to find ICT Literacy level of male and female Basic Science teachers in Upper basic school, Benue state. The result was that there is significant difference in the mean literacy levels in ICT between male and female teachers in Basic Science in Upper basic in Benue state. Secondary teachers whose literacy is low would sparingly use mediated instruction irrespective of gender. Similarly, the findings is inconsistent with Mahmood (2012) would find that female teachers are less positive on ICT literacy than the male teachers.

This gap as posited by Largen, Schumcher and Delumchi (2000), has been closed in Goergina, New jessy, Hawali, Massachuset and Rhode Island. Supporting this was the findings of Ono (2003) who revealed that woman was significantly less likely to use the internet in 1977 and 1998, but women were more likely than men to use the internet in 2001. This simply means that as the years goes by, men and women have continued to find the internet which is part of electronically mediated instruction relevant in teaching and learning. And as a result they show no difference in the use of this media in teaching and learning.

Conclusions and Recommendations

From this study, it could be concluded that the use of this electronic media by male and female teachers of chemistry doesn't differ significantly. This is an indication that gender is not a factor in the use electronic media in teaching Chemistry. Thus, gender is not a major factor to be considered in the use of electronic media for teaching chemistry. In view of the foregoing, it was recommended that; the use of electronic media should be encouraged in school not minding whether the teacher is male or female. Since from this study, most of the teachers whether male or female prefer using computer, there is need to provide school with computer laboratory stock with computers and at the same time ensure proper usage by chemistry teachers to facilitate their teaching.

REFERENCES

Achor E.E Kyador , j.j and ityobee, S. (2020) Survey of ICT literacy levels of Basic science teachers and students in upper basic Benue state Nigeria. BSU journal of Science, Mathematics, Computer Science, 1(1), 159-175.

Dalaham, P.D. &and Enweren, B.A (2018). Evaluation of chemistry teacher use of

multimedia for enhancing sustainable national development in secondary schools. Journal of Educational media and Technology, 1(22) 21-30.

Korgen, K; Odell, p. Schumacher, p(2001). Internet use among college students; Are their differences by race/ethnicity? Electronic journal of sociology, 2(3) 46-51

Mahmood A. (2012) Use of information and communication technology: Gender difference among students at tertiary level. Journal of education and instructional studies in the world. 2(4), 234- 240.

Nortan C. (2013) Australian literacy. Informing national policy on Education manual 411&454

Okobia, E.O. (2011). Availability and teachers use of instructional materials and resources in the implementation of social studies in junior secondary school in Edo state Nigeria review of Ethiopian studies, 3(2) 90-97.

Ono D.N. (2003). Computer- aided instruction. Retrived18th September 2017 from online *everyuipedia,www/.imauma,edu/ono/paper/cai/*pdf

Shermen, R. (2000) cyber psychology and Behaviour. 3(5) 265-274.

Singh, s. (2011) an evaluation of men and women use of electronically mediated instructions. New media and society 3(4) 395-406

United Nations (2008). Gender: concepts and destinations. Available at *http://www.un.org/womenwacth/osagi/conceptsounddefinations.*htm

Viegas, j. (2013) ten gender difference back up by science. Available at wep/news. Discovery .com /human/ life science-behind-gender-differences-135052 htm

The Wikipedia (2013) Circle for sustainability- Practical tools for creating sustainable cities and communities. 16th December 2013 retrieved in 8 June 2017 from en.mwikipedia.org/wiki/main.