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Editorial Comments

This current issue comprises of topical issues in higher education, which bother on improvement of quality of institutions of higher learning in this period of new normal. The topics addressed include comparison of curriculum innovations across universities, challenges of higher education teaching and learning in the new normal, gender influence on students' learning outcomes, cognitive behavior therapy and management of psychological distress among newly diagnosed people living with HIV/AIDS, knowledge, accessibility and utilisation of ICT among students as well as ICT factors and lecturers' productivity in public colleges of education in the new normal

In addition, other issues addressed in this edition are: emerging technologies as predictors of lecturers' job performance, improving the classroom practices of basic science pre-service teachers through e-interactive reflective strategies for effective instructional deliveries in the new normal era, effectiveness of quality control procedures in university of Benin in the new normal, the influence of human resource management practices on administrative staff service delivery in University of Ibadan. The last article investigated the Prospects and challenges of entrepreneurship and higher education in the new normal

The papers presented in this edition were peer-reviewed by highly reputed scholars in the field of higher education. It is hoped that stakeholders would find this edition useful in addressing challenges confronting higher education in this era of new normal.

The Editors

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CURRICULUM INNOVATIONS IN UNIVERSITIES: A COMPARATIVE ANALYSIS OF CURRENT PHYSICAL EDUCATION CURRICULUM IN AND OUTSIDE KENYAN UNIVERSITIES

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Abstract

The purpose of this study was to investigate whether the current education at universities meet the basic human rights or needs curriculum innovation to be devoid of discrimination. In 1997 female students at Moi University advocated for their gender rights. The objective of the study was to investigate whether the current physical education curriculum promotes gender equality and empower women. The study used Resource Dependence Theory and Social Development Theory within descriptive research design to explore how the physical education curriculum has been innovated in Universities to promote gender equality y and empower women. Through interviews, questionnaire schedules and observations, the study took comparative perspective to analyze this. The institutions have made it a mandatory for all students to acquire control and managerial skills. This has promoted gender equality and empowered women. The study has revealed that all female sports are planned and managed by females in Nairobi University only but Egerton, Moi University and Makerere are still struggling to achieve this fate. This means that there is need for University to set up innovations that addresses gender equity and empowerment women in all their disciplines.

Introduction

The main function of education is to develop human abilities and behaviours that are beneficial to the society and the individual. Education has also been considered a basic human right by the

United Nations. This means that universities or higher institutions of learning should observe this right. This right can only be observed if the universities take steps to innovate their curriculum so that they work towards achievement of the stipulated millennium development goals. In order to ensure sustainable development. It is important to recognize the input of the male and female. The curriculum reflect universal concept that all human beings both male and female are free to develop their personal abilities and make choices without limitations set by ones culture, rigid gender roles, and prejudices .Gender equality refers to equal treatment of men and women, boys and girls that motivate them to enjoy the benefits \of development including equal access to control of resources. It does not mean that men and women have to become the same. The curriculum should be innovated in such a way that men, women, boys and girls acquire knowledge, skills and willingness to critically analyze their situations and take appropriate action to change the status quo of the underprivileged gender and other marginalized groups in society. The UNESCO world conference on Higher Education (1998) advocated for elimination of all gender stereotyping in Higher Education and directed the elimination at all levels and in all disciplines in which women are underrepresented and an increase of women's active involvement in decision making. The focus of this paper is to investigate how the selected universities are trying to achieve the millennium goal number three which is concerned with promoting Gender Equality and empowerment of women. This goal recognizes the importance of women ability in effecting social change with a view to measure progress towards ensuring that more women become literate, have more voice and representation in public policy. Education being a vehicle to advance human ability, in 1948 the United Nations declared it as one of the fundamental human right, which was to be accessed by all human beings irrespective of their color, gender, creed, religion, economic background and disability. In many developing countries access to basic education has surged but learning has not kept pace (Unika,2019). Women have not been given their rights due to cultural beliefs. Universities need to review their curriculum so

that the curriculum is in a position to achieve the stipulated Sustainable Development goals. The paper tested the following research questions;

1. **Is gender equity taken into consideration when appointing sports officials?**

2. **Is gender equity taken into account when purchasing sporting equipment in universities? Are women empowered in sporting activities?**

The study used Resource Dependence theory and Social Development Theory within descriptive Research design.

Context

Sporting which forms part of physical education curriculum is a core discipline that the paper has focused on. Previously, the sporting activity was the world of men in most universities. Popular sports such as soccer, volleyball were manned by men. It was realized that women's rights were ignored in sports, after these realization curriculum in most universities were revised to enable women under take the sports of their choices, this brought in construction of women courts and fields. Since 1881 women have been taking part in sports like soccer that was only taken by men (Williams, 1997). This encouraged the women folk who mastered in physical education to take soccer as their major study subject and right now we have women professors, managers and directors of soccer in most universities in Kenya and Uganda .This innovation of the curriculum has brought equality to women since they have equal rights of choosing a sport of their choice as men.

Higher education has witnessed setbacks due to cultural inheritance the universities have found themselves in. Most women discriminative cultures were done away with after setting up gender centre or institutes, women were sensitized on their rights especially those to do with management. The institutes sensitized every faculty of school in the university about gender responsive curriculum. After the sensitization, students and staff came to realize that gender is a cross cutting issue and universities need to have gender policies

which require commitment; participation and contribution in order to integrate gender perspectives which need to be reflected in the universities curricular, governance and policy instruments.

The overall goal of the university gender policy is to promote gender equality and specifically equality between men and women by addressing gender issues in planning, implementation, monitoring and evaluation of university curriculum, recruitment, training, retention, research and extension and contributes to the achievement of equal opportunity for all cond0ucive working and learning environment

Methodology

The study used Resources Dependence Theory within descriptive research design. The samples include four public universities; three in Kenya and one in Uganda. The universities were purposively sampled based on the fact that they had established gender centres or institutions that had the responsibilities of coordinating gender issues in the universities varied disciplines.

This was the assumption that guided this study. The universities that took part in the study were: Makerere University in Uganda, Nairobi, Egerton and Moi Universities in Kenya.

In each university, the general views concerning gender issues as pertaining to promotion of equality and empowerment of women was captured through interviews with the university managers and questionnaires administered to them which sought to find out whether attempts were being made in the curriculums to impress gender equity and empowerment of women.

The second face of the study involved curriculum innovation towards achievement of gender equality and empowerment of women. The two issues involved interviews with gender centre managers, students and staff of sports/sport science discipline. In cases where the universities had more constituents or set light campuses the disciplines in the main campus were used for this study.

In the selected universities, the managers, who included: the Vice chancellors (4), Deputy vice chancellors (4), Registrars (4), and Deans of faculties (4), Heads of Academic Departments (4), Directors

of gender centres or institutes (4) were targeted for administration of interviews and questionnaires. Four (4) academic staff at the rank of assistant lecturer were selected from each of the disciplines in each of the selected universities based on their year of study, that is second, third and fourth years. An additional group of students enrolled on short courses on gender at Egerton University were involved in the study as a special sample to enable the study investigate some of the gender issues that needed intervention so as to promote equality and empower women through curriculum innovations in universities. Those students were served with different questionnaires related to courses they were enrolled in. Students in science oriented courses were served with questionnaires which sought to find out whether attempts were being to have gender equity in staffing and empowerment of women in their departments while those in arts based courses were served with questionnaires which sought to find out whether the teaching materials and equipment provision impressed gender equity and empowerment of women.

Data was collected using questionnaires (for students and academic staff), semi structured interviews guides for managers and directors/coordinators of gender centres, document analysis guides (for statistical data) and structured interviews. Participant observation scheduled (for observing gender relations in the lecture rooms, meetings and training sessions)s. Data obtained from the interviews, documents and observations were analyzed through a process of content analysis and organized into themes. Using descriptive research design generalization of the data collected was made.

Findings

When students were asked whether attempts were being made to achieve gender equity and empower women the responses were as shown in Table1

Table 1: Are attempts being made to achieve gender equity and empower women?

		YES	NON RESPONSE	
	FREQUENCY	%	FREQUENCY	%
FEMALE RESPONSE	10	62.5	6	37.5
MALE RESPONSE	12	75	4	25

At Moi University the students were asked whether there were curriculum innovations geared towards achieving gender equality and empowerment of women. A majority of students; 62.5% of females and 75% of males surveyed in this study indicated that attempts were being made in the curriculum so that achievement of gender equality and empowerment of women become a reality. Students in the faculty of sports management which is part of physical Education curriculum supported the above sentiments they said that the sport management course was one of the recent innovations at the university. They further said that the management courses in sports could empower them because learners officiate matches and take part in decision making. The students gave an example of a lecturer who teaches them sports management. This lecturer is the director of the Institute for Gender Equality and Research Development. (IGERD). The Institute for gender equality, Research and Development seeks to promote gender equity and equality between men and women at Moi University. The students said that unlike in the past where women sports were being taught entirely by men, the present groups of women who take part in sports are taught by women teachers. What this implies is that women at the university have acquired managerial knowledge hence they have been empowered to manage their own affairs. Most of the academic staff and managers mentioned affirmative action of lowering the cut off points as a way of driving towards equality between men and women at the university. Since 2001 the joined admission board that oversees student's admission to public universities has lowered the universities cut off points (entry points) by about one point for girls. They also claimed that the curriculum was being reviewed to make sure that majority of the courses have attracted women, they gave an example of resource

management where women have been exposed to managerial skills and that majority of them have management skills.

Traditionally there were no fields for ladies soccer before gender issues were raised and this made soccer a field for men. With the introduction of the soccer fields for girls the women have been given equal opportunities to take soccer as their subject of study as do their colleagues.

The availability of three lady lecturers in sports management points to the fact that women can manage their own affairs. The managers also pointed to the setting of gender institutes and launching the gender policy in the university as some of the strategies geared towards achieving gender equality and empowerment of women.

The director of the institute of gender equity research and development {IGERD who also teaches sports management, out lined the duties and responsibilities of the institute. According to her the institute gender equality research and development was launched in 2003, its major mission was to seek ways of promoting gender equity and equality between men and women at Moi university. As part of its mission to achieve this mission, the institute organizes workshops on gender sensitization and main streaming gender in all university functions.

The director of the Institute for Gender equality, Research and Development (IGARD) said that the achievement of the Moi University gender policy was a remarkable achievement of the institute. According to her the overall goal of the University gender policy is to promote gender equity and equality between men and women at Moi University by addressing gender issues in planning, implementation, monitoring and evaluation of the University programs, recruitment, training, retention, research and extension; and contribution to the achievement of equal opportunity for all conducive learning and working environment. This will pave way for level playing grounds for both genders. According to her the institute has employed a number of strategies to achieve its objectives which she outlined as follows:

1. To achieve equal representation of both genders in the government and management of Moi University. The institute has carried out workshops and seminars on gender sensitization to curriculum innovators, heads of schools in the universities, dean of students and authors of university books.
2. To main stream gender in university policies, academic program and activity planning, budgeting implementations, monitoring and evaluation processes. This has been possible due to the mobility of the director of the institute being a member and an executive in the Moi university curriculum and a member of variety of curriculum development committees in the university; she has been able to convince them to incorporate the gender factors in their plans.

3. To create and sustain a gender responsive, working living and learning environment. The institute has sensitized the heads of schools and departments on the need of approving their books. The books that make use of gender sensitive language and avoid demeaning a certain gender either in words, pictorial and illustrations are to be approved.

4. To promote an institutional culture that is empowering to both genders. The workshops have sensitized heads of schools, faculties and departments on the need to balance between recommendation on female and male authored books.

5. To eliminate sexual harassment and gender based violence. The institute has sensitized the schools about the rights of women as pertained in the Sustainable Development Goals.

6. To ensure gender equity and equality in staff recruitment, deployment, development, promotion, retention and welfare. The institute has carried out seminars and workshops on the rights of women as pertained in the Moi gender policy, the Kenyan constitution and millennium Development goals. During the seminars and workshops, schools and

departments have been encouraged to equip the university press with materials that accommodate the rights of all human beings as pertained in the millennium Development goals and specifically encourage female authors to submit manuscripts through marketing strategies and writing workshops, the universities should give incentives especially to women authors.

7. To promote gender equity and equality in students enrollment progression completion and welfare. The Institute carried out variety of workshops and seminars. On students enrollment the institute found that the affirmative action is maintained where girls enter the university a point less than the boys. It also found that the scholarships that have been awarded to girls have also increased their equality and empowered them to take up courses that were traditionally thought to be men`s fields.

During the interview the director said that the institute has moved to various schools to sensitize gender issues to both female and male staff. According to her report the recent results show that female were 88% aware of gender issues, while only 75% of men were aware of gender issues. This awareness has made many female students to take up managerial courses that were traditionally taken by men.

According to her in 2013 Moi University had achieved 62% men and 38% women in teaching staff department. Available documentary reports show that in 2004 and in all schools women teachers were below 20% and none of them was full professors. Comparatively by April 2010 gender study statistics from 14 schools (excluding Aerospace) indicates that 75% of the lecturers are men and 25% women what is evident is that women are being empowered through the achievement of higher education. The empowerment comes as a result of sensitization of the gender issues by the institute. The achievements are significant keeping in mind that gender policy stipulates achievement of 30% of women in teaching and administrative positions. As a result of gender

sensitization by the institute a good number of schools have achieved the 30% requirement. The following schools have achieved the 30% of the female gender in teaching positions

- Education
- Information science
- Public health
- Tourism
- Nursing

The launch of B.S. Sports management and the ability of three female teachers who teach sports management has made more women acquire managerial skills and this is the road to achieve gender equality and empowerment of women at Moi University.

This year, the placement service lowered entry grades for women candidates from minority and marginalized groups to ensure gender equality is addressed in all public universities.

The service lowered the minimum university entry requirement to B-(Minus) of 58 points for female students and 60 points for male students (the standard, August 12, 2014)

NAIROBI UNIVERSITY

The study had sought to find out whether the inclusion of women of soccer for women and the availability of appropriate facilities for its perfection impressed equity and empowerment for women. Documentation reports shown below in table 2 were analyzed.

TABLE 2: Slots for Nairobi University 2014/2015 Undergraduate student's intake

COP	PROGRAM NAME	CAP	ALLOC	GENDER DISTRIBUTION			
				M	F	M%	F%

35.582	BA OF EDUCATION(ARTS)	350	359	213	146	59.33	40.67
44.272	BA OF EDUCATION(SCIENCE)	140	144	110	34	76.39	23.61
34.194	B.S.(WILDLIFE MANAGEMENT)	45	47	25	22	53.19	46.81
41.308	BA OF ECONOMICS	195	199	109	90	54.77	45.23
41.989	B.S.(STATISTICS)	35	36	19	17	52.78	47.22
39.694	BA OF ARTS(PLANNING)	40	40	21	19	52.50	47.50
42.431	BA OF CONSTRUCTION MANAGEMENT	30	30	26	4	86.67	13.33
30.819	BA OF EDUCATION(EARLY CHILDHOOD EDUCATION)	50	50	12	38	24.00	76.00
39.999	B.S. (MANAGEMENT OF AGRO-ECOSYSTEM AND	45	45	36	9	80.00	20.00
32.821	B.S. (HORTICULTURE)	45	44	32	12	72.73	27.27
33.614	B.S. (ENVIRONMENTAL CONSERVATION AND NATURAL	80	80	35	45	43.75	56.25
35.770	B.S. (AGRIBUSINESS MANAGEMENT)	140	139	78	61	56.12	43.88
40.284	B.S. (FOOD NUTRITION AND DIETETICS)	45	44	7	37	15.91	84.09
43.640	B.S. (MEDICAL LABORATORY SCIENCE & TECHNOLOGY)	30	31	18	13	58.06	41.94
43.159	B.A OF ECONOMICS AND STATISTICS)	153	151	93	58	61.51	38.41
44.458	B.S. (MICROBIOLOGY AND BIOTECHNOLOGY)	80	84	48	36	57.14	42.86
43.303	B.A OF REAL ESTATE	35	35	23	12	65.71	34.29
25.000	B.A OF EDUCATION (PHYSICAL EDUCATION AND SPORTS)	50	48	23	25	47.92	52.08
34.116	B.S. (AGRICULTURAL EDUCATION AND EXTENSION)	120	119	84	35	70.59	24.41
35.521	BA OF EDUCATION (ICT)	25	25	21	4	80.00	16.00

Source; The Standard August 12, 2014 –
KEY CAP= CAPACITY, ALLOC= ALLOCATION, M=MALE, F=FEMALE, COP=CUTOFF POINTS

Nairobi University has been able to expand the curriculum. The subjects which were traditionally taken by men only are now being taken by men and women. Take for example BA of Education (Physical Education and sports). When you analyze table 2 you will discover that more females take the course than males. This situation has happened as a result of sensitization of women about gender

issues by the university gender affairs office. The inclusion of soccer for women in the curriculum due to the provision of soccer fields for women soccer. This provision plus availability of appropriate facilities and human recourses in the department has given the women students an equal opportunity to choose the course of study to take as do their men colleagues' the provision of appropriate human resources gives them the power to lead and take part in decision making. The presence of reasonable number of women in comparison to men means that women are on the way to achieve gender equality and power.

Edgerton University

The Institute for women gender and development at Edgerton University was established to sensitize students and staff on gender issues. In 2007 the institute organized a course for female staff. The course attracted 50 women participants drawn from the academic staff .The facilitators stressed that women have to go an extra mile in order to achieve top managerial positions. To do this, women have to sacrifice their families and ignore retrogressive cultural practices and divisive cultural beliefs. The main goal of the work shop was to enable Women participants build networks and support for each other. The workshop was facilitated by senior academic women who had been trained under the Association of Common Wealth Universities (ACU) Women in higher Education leadership and management program. The various facilitators and speakers emphasized the importance of empowering women in higher education leadership and management, identified the price women have to pay to achieve top management. Some of the prices include sacrificing ones family, stereotypes from men and retrogressive cultural practices.

Makerere University

At Makerere University the gender mainstreaming program was established in 2001. This programe is to main stream gender in the university fraternities of teaching and learning; research and innovation and knowledge transfer partner's helps and networking. These are strategies for making women as well as men's concern

experiences an integral dimension of the design, implementation, monitoring and evaluation of institutional policies and management. The gender mainstreaming programe has made sure that there is an established gender equal policy. In 2010 the Makerere university gender equality policy was approved by the university council. This policy is the overarching statement of university`s commitment towards gender equality and women`s empowerment. In the year 2006 the policy on sexual harassment was approved by the council. These policies sensitize students and staff on evil of sexual harassment and instill a sense of responsibility and the tolerance of sexual harassment. In addition it encourages victims of sexual harassment to exercise their rights, maintain their dignity and refuse to succumb to pressure of sexual harassment. Most Victims of sexual harassment are girls and women .The policy instills essence of responsibility and zero tolerance of sexual harassment as such it is promoting equality and empowering women. The above two policies have brought innovations in most curriculum Disciplines that have enabled more women and girls participating in administrative and academic affairs.

At Makerere University, the university has put in place a gender component in every subject in the university curriculum. To bring about equality and empower women the university has put in place a Gender focused research, post graduate training for female staff and promotion of women in leadership.

This programe is offered to female academic and administrative staff to access post graduate training and build their skills for leadership. The program coordinates 10 PHDs and 30 masters' scholarships in various disciplines. The scholarship beneficiaries are encouraged and supported to integrate gender issues in their research. For administrative staff Institutional research is highly encouraged. To make sure that the female staff makes progress in their professional and personal life a mentoring initiative has been established. The mentoring initiative has female as mentees. The mentors are both men and women senior in rank and willing to volunteer their services. To achieve gender equality in students governance and welfare, every year gender mainstreaming Division selects 50 students peer trainees (25girls

and 25 boys) as agents of agents of gender issues amongst students for this to be possible, the peer trainees undergo an intensive training of trainees in gender leadership, communication and life skills: the intention gained by peer trainers is transmitted to fellow students during such occasion as women`s day, culture day or health/HIV/AIDS day. The students peer trainer also work with students guide to influence the students policies and most of them usually become students leaders.

Gender Mainstreaming Division (G.M.D) has made effort to bring gender issues to university departments/disciplines. In each discipline gender issues have been identified in each planning unit and strategies formulated on how to address them. This has involved revision and innovation of the curriculum in all university departments/disciplines. The university gives the G.M.D the opportunity to use the streamlined and decentralized structures to influence the planning process.

In 1991 the department of women and gender studies was established to offer undergraduate and graduate training to gender. In 2010 the status of the department was raised to the school of women and gender studies (SWGS) under the college of humanity and social sciences of where sports science is part of the subjects in the physical education curriculum. The department advocates for promotion of gender equality and empowerment of women. Most women sports had no facilities for example volleyball and soccer fields were missing. Right now women take masters and doctorate degrees in these subjects because they can do it in theory and practice. The department has advocated for compulsory sports for all students registered. Through their efforts they have managed to get three female lecturers who teach sport sciences. The department of sport science offers sports skills services to the students through a comprehensive dynamic and exciting in the hall sports championship in various women and men sports disciplines, they take place throughout the year sports club organize a variety of close and open championship as per revised curriculum. The revised curriculum sport include squash, Badminton, Basketball, Darts, Table tennis, Football, Ring tennis, Walking, Hockey, Wood ball, Rugby, Netball, Handball and swimming. Since

the senior sports tutor is female gender issues in the department do not arise.

The department has been able to thrive through the female scholarship initiative. The initiative has offered scholarship to 691 girls from 200 to 2010. The initiative makes sure that the girls receive capacity building and mentoring. The initiative has seen 60 percent of the girls gain full employment. The female scholarship initiative has found their Alumnae association. To make this initiative a continuity, on 20th November 2010, Makerere University launched the female scholarship foundation. During the launch 20 scholarships were offered with an additional 10 for the year 2011 academic year. To make more girls achieve education, Makerere University made an appeal to the government to support 150 girls from Greater Northern Uganda to access Makerere University for 2011/2012 academic year.

Gendering of the university curricular has spear headed the process of main streaming gender in the university curricular. Under this process the status report on gender in the curricular has been developed, with the specific ranking for each unit and recommendation made for improvement.

Discussion

Throughout the world gender equality campaigns have served as important vehicles for encouraging equal recruitment of women students and staff in universities. The Platform for Action and the Beijing Declaration (1955) identifies education as a basic tool in the realization of equality. In 1998UNESCO convention on Higher Education a panel of experts analyzed the progress made on gender equality on higher education since the Beijing Conference 1995. The participants at the world conference on higher education underscored the role of higher education in enhancement of women`s participation in the running of university affairs.

Gender disparities are apparent in admission of students to universities. In 2007 female students in Kenyan public universities comprised 37% of the total student's population. Between 2000 and 2004 the number of female students admitted was 3836. (Republic of Kenya 2008,58).An estimate 22% of Kenyans 45000 university

students and 5% of students in post graduate female students are enrolled in science and technological courses (ministry of higher education, Kenya 2008).This gender inequality has been seen as a setback to the achievement of some or most of the SDGS. In a way to overcome this, universities time and again have done a lot of curriculum innovations. To achieve promotion of gender equality and empowerment of women, the government has set up session paper number one (2005), a policy framework of education, training and research. This paper addresses accesses of equality in education. The address is through respective universities councils and commissions for higher education. According to the paper the government is supposed to provide scholarships based on the needs of the economy targeted bursaries and loans to the needy taking in to account gender parity (Republic of Kenya 2005:55)

Curriculum innovations have been made to be in line with the achievement of Sustainable Development Goals that stress promotion of gender equality and empowerment of women. Under this arrangement the government has made a review of curriculum and teaching materials to ensure they are gender sensitivity proof (Republic of Kenya 2006b,3).To strengthen achievement equality and empowerment of women the government set up a gender policy in 2007. This gender policy included commitments to enhance access and gender equity in universities through affirmative action and provision of grants and loans to needy and marginalized groups (Republic of Kenya 2007,26)

In his study of the four public universities and 17 private universities of Uganda Morley found that female enrollment was at 34% in 2004 (Morley et al 2006).the present Ugandan constitution makes various provisions for gender balance and fair representation of men and women in all public sectors. The government has instituted a number of mechanisms to ensure respect for human rights and fair_participation of men and women in the development of the country. A separate ministry of gender, labor and social development has been established. One of the functions of the ministry is to empower communities, particularly marginalized groups (Republic of Uganda, 1996, ministry of gender and community development plan2). This implies that achievement of

gender equality and empowerment of women is enhanced through affirmative action at universities this combination coupled with the establishments of gender centres or institutes in the universities will in the long run make this goal achievable.

The study used Resource Dependence Theory and Social Development Theory within descriptive research design to explore how the physical education curriculum has been innovated in universities so as to promote gender equality and empower women in selected universities.

According to Resource Dependence Theory organizations have to maximize their power and compete for survival using the environment. I found the environment to be very rich. The environment had universities which were interested in achieving the study objective .The study objective was achievement of gender equality and empowerment of women. Some universities in the environment had set up gender centres or institutes to check on the achievement of this goal. Accordingly universities curriculum had been made to accommodate the achievement of this goal. Using ideas of the Social Development Theory the remaining universities under study had done research in these areas and had set up gender centres or institutes in their universities to pursue the same goal

This study revealed that there has been an attempt to incorporate gender issues in the selected universities through the setting up of gender centres or institutes. These gender centres have been involved in a number of activities. The activities of the institutes are kept alive due to the students and staff working there, the activities was boosted by the government and the nongovernmental funding. These activities were geared towards making students and especially female students cope up with many challenges they were facing in their universities and social environments. To make the universities cope up with these issues, most of the selected universities had reviewed their curriculum and done a lot of innovations geared towards the achievement of the millennium development goals.

The innovations in the curriculum included: the inclusion of women sports in the curriculum, inclusion of special education in the

curriculum and inclusion of gender courses both at undergraduate and postgraduate levels. The curriculum had a revised content and teaching strategy in a variety of disciplines. This implied that the gender inequalities in majority of the disciplines are being eliminated through gender sensitive content and teaching and learning styles. In spite of the female staff being underrepresented in the university's academic ranks and management positions changes were being made in the curriculum aimed at responding to the rights of women. The rights of women touched on gender issues. Some of the gender issues the revised curriculum addressed include promoting gender equality and empowerment of women. With provision of more women courses and especially in sports and in introduction gender courses at undergraduate and postgraduate levels, the women were being empowered with the academic qualifications and professional development to enable them compete with their male counter parts.

The sustainability of gender equity intervention to a greater extent was being funded by the Government and nongovernmental organizations. Their work was made possible by willing individual female staff and students who were committed to gender equity in society. The activities carried out by individual female staff and students sustained the existence of these centres.

The government and the nongovernment funding of the centres enable the staff working in these centres get motivated to sustain the activities of these centres after getting extra allowances as a result of working there. The staff working towards gender equity in the selected universities is carrying an extra load which they can quickly put a side if they cannot get adequate support and incentives Abraham and Altman (2005: 13).

This is in line with the Resource Dependence theory which sees organizations dependent on resources in their environment succeed by maximizing on their power to compete and utilize the resources (Pfeiffer 1981)

This implies that the women students and staff are working day and night to see to it that they achieve equality with their male counter parts and in addition they need inceptives to motivate them achieve this power. Through launching of the gender centres or institutes in their universities the universities are making positive

steps towards achievement of goal no.3. These institutes or gender centres have not been fully utilized because the managers of the centres have not had formal education on gender issues. The study revealed that the majority of centres were managed by personnel that had no formal education on gender issues. On the other hand the institutes were not fully utilized due to non-inclusion of their vision directly into the curriculum. For achievement of goals no.3 to take place, the curriculum planning committees were supposed to have specialists in gender issues, who could interpret policies geared towards gender equity, discuss it in the senate or board rooms and forward the same to the higher authority for the implementation. Policies concerning gender issues were hurriedly put into force without prior- research.

During the interviews it was revealed that after women were given an advantage during admission, they faced the physical torture. The physical torture included congestion in women accommodation, and exhaustion of personnel who tutored women sports. The science department became a man's field because none of the students who went to university through this advantage ever qualified to take science courses. It is urged that encouraging preferential treatment in university education and hiring or appointing women to leadership perpetuate the myth that women are inferior. Women who enter university a point or two less the cutoff points for men justify the fact that women are inferior to men and sometimes called names which psychologically affect their stay in those universities. This name calling lowers their morale and even discourages other qualified students from joining the programe (Morley, 2006). A student interviewed by Nungu (2004, 15) in Kenya said, "It has put, majority of us women in a very bad sport. Once in a while a male student will tease you that you joined the university courtesy of Joined Admission Board decision to lower points for women." Affirmative action is perceived as reverse discrimination (Jordan 1995, 55 cited in Morley 2004, 11) and a means of legitimatizing reverse discrimination against men and boys. This vice goes against the right to education which in parts reads." Everyone has a right to education which should be free and compulsory, all are entitled to all the rights without discrimination of any kind such as

race colour, sex, birth or any other status "(Ngugi 2002, P.23) what this means is that we need experts at departmental levels also curriculum innovators who are well versed in millennium development goals those are the people who are termed the more knowledgeable by Lev Vygotsky (1896-1934). In his theory on social development, he argues that social interaction precedes development. This means that before any policy is implemented its implication must be known. The impact the policy will have on other policies contained in the system should be known. The departmental curriculum innovators will have to study the millennium development goals and formulate ways in which they can be fussed in the curriculum without having negative impact on the already existing ones.

Finally we can say that Affirmative action has been used which has been supplemented by policies and national constitutions to give women priority in administration, appointments/or nomination position of responsibility. The affirmative action that the universities have employed is bearing fruits. The affirmative gives a minority group a prescribed representation in appointments, responsibility or administrative positions. Though affirmative action does not give a 50:50 percent representation but it's a step towards achievement of equality. The affirmative action is being employed in universities and women are driving towards equality and on the other hand achieving power when they get posts in administrative position. However this priority given to women does not mean that the minimum qualifications are ignored. What it means is that if there are two or more qualified people and one of them happens to be a woman. **The woman is given priority.** The setting up of gender centres or institutes has made it possible for women to achieve equality and empowerment. The institutes have sensitized the curriculum developers on the need to include gender subjects in their curriculum. The sensitization and workshop programes carried out by the institutes has made many female students take part in managerial courses like in physical education we have sports management and Resource management which were a results of recent innovations in the curriculum. The director of the Institute for Gender Research and Development serves a good role model. Through her position she

has made Moi university physical education curriculum enable women to achieve equality and get empowered.

Conclusion

The findings on achievement of promoting gender equality and empowerment of women in the selected universities reveal that we have some attempt to achieve this goal. During the visits it was revealed that most universities had done a lot of curriculum innovation and introduced courses that were women friendly. The courses have made many women achieve high education in a variety of disciplines, this has increased their potential to lead and take part in decision making. The increased female students to university education due to the lowering of entry points for girls has resulted in significant increase in female students enrollment in managerial courses in the selected universities. The increase in managerial courses leads to leadership quality which is a yard stick for empowerment of women.

Recommendations.

After studying the curriculum innovations in the selected universities the study came up with the following recommendations.

1. There is need for universities to promote innovations that impress gender equity and empower women.
2. New innovations should impress flexible curriculums that are learner friendly and effective in the new normal era.
3. There is need to provide facilities and equipment that impress gender equity and empower women.
4. Curriculum formulation and design panels representation should reflect gender equity and empress women empowerment.
5. The learning and teaching environment should impress gender equity and empowerment of women.
6. Reference materials, illustrations and examples should take into consideration gender equity issues.

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AN EXAMINATION OF HIGHER EDUCATION TEACHING AND LEARNING CHALLENGES IN THE NEW NORMAL

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Abstract
Education is the fabric of any culture, with it, culture is transmitted, thoughts are conceptualized and information transmitted. It is nearly impossible to imagine a learning process without education, in this case higher education. Education is the best legacy any parent or the country can pass on to its youth. The importance of higher education and its contributions to educational system in Nigeria cannot be over-emphasized. This paper recognizes the benefits and challenges faced in attempting to provide higher education most especially in the Covid-19 era. It penned down that government support and other sources available must be harnessed to supply the resources needed to provide qualitative higher education, and deal with the challenges in recent times and the challenges of e-learning in Nigeria ranges from irregular power supply, high internet subscription costs, poor internet access amongst other factors. The applicable opportunities associated with the embracing e-learning includes lecturers ″/learner's convenience, exposure and cost benefits. This study recommended that government needs to be more firm in their handling of public universities administration and help prepare them for the adoption of ICT and e-learning in Nigerian institutions.

Keywords: *Higher education, teaching, learning, new normal, e-learning*

Introduction

The COVID-19 pandemic brings in a lasting impact to the society and community in every area one could think of in the country. The Nigerian government released a policy toward this pandemic outbreak

by asking all the educational institutions to host the education; teaching and learning at home (study at home) through maximizing the use of the online system. Hege (2019) explained about new challenges for ICT in education policies in developing countries: The need to account for the widespread use of ICT for teaching and learning outside the school. Consequently, formal institution should change their perspectives and practices and think about why, who, what, and how of education during COVID-19 outbreak (Horspool, 2012). Education surfaced through the use online education through their cellphones, smartphones, notebooks to keep them stay at home and getting lessons and knowledge from the teachers.

Teaching and learning process at higher education during the COVID-19 pandemic enabled educational institution to have a rethink as they cannot undertake the face to face interaction in the classroom. It makes the universities think so hard to overcome existing learning difficulties faced by the lecturers and students. Online education is chosen to occupy the academic connection between lecturers and students. Chukwu et al. (2008) argued about "Paperless" foreign languages teaching. Online teaching uses paperless contribution in distributing materials as well as the submitting assignments.

Moreover, Oliver R. (2000) took a study about using e-learning platform (Moodle) in university teaching process. The use of technology in new normal teaching make lecturers and students should realize to use the online education in harmony with the pandemic period.

Education

Education is the process of acquiring knowledge, skills and other capabilities. Education could be formal with clearly-stated objectives and informal with unintended results. It is an encompassing and a universal aspect of any culture. Although it is a universal feature of society, educational systems vary according to organizational structures, pedagogical practices, and philosophical and cultural organizations (Kunle and Rotimi, 2006).

This may be easily noticed when one examines educational systems in a variety of cross-cultural settings, (and even among the

myriad of public, private, parochial, and alternative educational networks).

What to learn, how to design the learning to a great extent, is a function of culture. For instance, in pre-colonial Africa, the pattern of learning was chiefly informal with the family playing the major role. It was not only the responsibility of the immediate nuclear family, but also that of the extended family and community at large to educate the younger generation (Jaja, 1996). Jaja also added that there were particularly no systems of organized educational training. The acquisition of skills and language was achieved through the simple process of observation and imitation with little or no overt instructions. However, there were also elements of deliberate learning in specialized occupations such as goldsmithing, weaving, carving and specialized religious acts and functions. This was the result of prolonged training based primarily on decent i.e. the younger understanding the older.

Higher Education: A Concept

Higher Education refers to the western type of education which is organized after college education. Rules and regulations are formulated and administered by the Ministries of Education while policies are drawn up to guide and direct such institutions by Government. In the Higher Education, there are laws, rules and regulations guiding the type of buildings, facilities, equipment's required in the institution, the entry qualifications of students, their ages, the curricula, the rules guiding the student's movement, the qualifications of the teachers/lecturers, their workloads, their conditions of service and the student's certification and graduation. There is usually quality control mechanism, in the case of Nigeria, it is the universities and the National Universities Commission (NUC) that is saddled with that responsibility. It became obvious that for Nigeria to effectively grow and develop, it needed the universities and in order to develop; a country must have a very considerable proportion of trained citizens, not only to act as doctors, engineers, teachers and agriculturists but also to establish its own values of justice, selection on merit, flexibility, empiricism and efficiency.

Higher Education can also be refer to as an organized learning at the tertiary level. The National Policy on Education (2004) defined tertiary education to include universities, colleges of education, polytechnics and monotechnics. Tertiary education is aimed at:

a) contributing to national development through high-level relevant manpower training.
b) developing and inculcating proper values for the survival of the individual and society.
c) developing the intellectual capability of individual to understand and appreciate their local and external environment.
d) acquiring both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society.
e) promoting and encourage scholarship and community services.
(f) forging and cementing the national unity; and
g) promoting national and international understanding and interaction.

The first institution of higher education was the Yaba Higher College, established in 1934. This became the nucleus of the first university college, established in 1948 at Ibadan. At independence in 1960 there was need for expansion, the university of Nigeria, Nsukka was established in 1960, Ahmadu Bello University, Zaria, University of Lagos, and the University of Ife (all in 1962) and much later, the University of Benin (1970). These are known as the first generation universities. In 1975, with the twelve states structure, and the agitation for more universities by Nigerians, the Federal Government established seven additional universities at Jos, Maiduguri, Kano, Sokoto, Ilorin, Calabar and Port Harcourt. These universities became known as the second-generation universities (Olaniyan and Adedeji, 2007). Virtually, all states have either a higher institution or a Federal one located within.

The establishment of Higher Institutions was to train various crops of people. Nigeria now has crops of well-educated graduates despite the now popularly taunted falling standard. And are readily making contributions in all spheres of the country's development.

Challenges of Higher Education

i. Inadequate funding

Inadequate funding is one constraint that has threatened the attainment of quality higher education in Nigeria. The problem of inadequate funding of education has been a bane to educational development in the country. Many institutions of higher learning in Nigeria were unable to build lecture halls, students' hostels, equip laboratories and workshops and payment of staff salaries, research grants, allowances and medical bills (Olaniyan,2005).

ii. Inadequate /poor quality of teaching staff

A big challenge to the attainment of quality higher education in Nigeria is the lack of academic staff. According to Coombs (1970), teachers are the hub of any educational system. Teachers determine the quality of education because they transmit educational policies into practice and action.As rightly pointed out by Olaniyan (2005), without adequate number of inspiring, well-informed teachers, fully prepared to meet their responsibilities in our schools, we cannot have good education and without good education, we cannot hope for long to meet successfully, the challenges of a changing world.

Despite the importance of teachers in the attainment of good education, institutions of higher learning in Nigeria are short of lecturers to adequately handle teaching and learning activities. Bamiro, (2012) attributed the problem of de-intellectualization of the academia to low quality of staff of some institutions of higher learning in Nigeria. Where there is inadequate teaching staff and poor quality of lecturers, the attainment of good quality in higher education will be difficult.

iii. Poor policy implementation

Poor policy implementation has been a challenge to quality delivery in higher education over the years. The poor quality delivery is responsible for the abysmal low performance of graduates of

institutions of higher learning in Nigeria in their world of work and the alarming incidence of examination malpractice. However, several factors could be adduced as inhibitors to smooth implementation of educational policies and thereby resulting to poor quality delivery. Such factors as government underfunding of education and injudicious utilization of available funds by implementation agencies-vice chancellors, rectors, provosts' deans of faculties, heads of department etc.

iv. Lack of resources

Quality higher education is dependent on the quality and quantity of human and material resources put in place in institutions of higher learning. The lack of infrastructures such as science laboratories, workshops, students' hostels, libraries and electricity will affect the quality of education.

Besides, the libraries in most institutions of higher learning in the country are stocked with obsolete text books, with current journals and text books lacking. The library is at the heart of the academic effort in a college or university. For an institution to be strong academically, it must have a formidable library put in place. This explains why the top universities of the world (Harvard, Cambridge, Tokyo and University of California) are academically of high strength and quality. The acute shortage of educational facilities in institutions of higher learning in Nigeria has led to decline in the quality of higher education in the country.

Worried about the poor quality of graduates of higher education institutions in Nigeria, the National Universities Commission carried out a need assessment survey which was reported by Okebukola, (2005) and highlighted the following: only about 30% of Nigerian students' population has adequate access to classrooms, workshop, lecture halls, laboratories and libraries. Deficient libraries in terms of currency and number of books, journals, and electronic support facilities.

v. Lack of information communication technology facilities

Lack of information communication technology facilities in institutions of higher learning most especially in these times. As part of her education reform effort, Nigerian government adopted information

communication technologies in all levels of education since information communication technology integration in educational practices is meant to improve teaching and learning, enhance higher education research, enhance collaboration among peers and improve quality of education.

Curriculum content could be enriched through search from the internet by teachers. Through such internet search, information and relevant school practices which are unknown to teachers and students and which cannot be found in textbooks, can easily be downloaded for use. Information and communication technology in education has been continuously linked to higher efficiency, higher productivity and higher educational outcomes, including quality of cognitive, creative, and innovative thinking (Olatoye, 2011).

vi. Frequent labour disputes and closures of universities

A big challenge to quality higher education in Nigeria is the incessant staff union disputes and subsequent closures of the institutions. Olatoye (2011) provided a catalogue of strikes by the Academic Staff Union of Universities (ASUU) and the Senior Staff Association of Nigerian Universities (SSANU) within fourteen years. She revealed that they were too many strikes, some of which lasted up to six months. She also identified the cause of the frequent trade union disputes as poor conditions of service of staff, non-implementation of ASUU/FGN or SSANU/FGN agreements, lack of autonomy and academic freedom and poor funding.

The disruption of academic programmes of institutions of higher learning affects students learning outcomes whenever lecturers are on strike thereby leaving the course work unfinished. In most cases, a semester's course work is sandwiched to few weeks during which lectures are rushed to accommodate the time lost to strike. This type of academic rush is a big threat to attainment of quality in higher education in Nigeria

vii. Lack of vibrant staff development programmes

Most institutions of higher learning in Nigeria lack staff development programme for training and re-training of staff. Vibrant staff development programme on a continuous basis will help academics

and non-academics to clarify and modify their behaviour, attitude, value, skills and competencies. In this way, they grow and develop in their knowledge and thus become more effective and efficient in the performance of tasks. In addition, Kaceranskas (2020) reported that lack of staff development programmes accounted for the decline in quality of tertiary education in Nigeria. Similarly, Oliver (2000) noted that an employee who is not trained and exposed to continuous retraining in the modern methods and new discoveries in his or her field will soon become irrelevant to the organization.

viii. Brain drains

Over the past decades, there has been mass exodus of brilliant and most talented lecturers to other sectors of the economy. Some of the lecturers left Nigerian universities to join the business world, some joined politics while others left Nigeria for better services. Brain drain has led to decline in research outputs from institutions of higher learning in Nigeria vis-à-vis the disappearance of research centres in Nigerian universities.

ix. Poor leadership

Poor leadership both at the government level and at the institution level have been a big challenge to quality in higher education in Nigeria. Since the nineties, the government of the country has not shown enough commitment to higher education development in Nigeria. One of the several indices for properly evaluating government commitment to educational development in any country is budgetary allocation and disbursement to education.

Additionally, poor leadership exhibited by some Nigerian university administrators has been a bane to the attainment of quality in higher education in Nigeria. Institutions of higher learning in Nigeria exist because they are goals to be attained. These goals can be effectively attained when the human resources within the institutions are properly managed for their positive impacts on productivity. This is the place of leadership in the institutions of higher learning. The duty of leadership is to reduce problems within the system in order to enhance efficiency (Hasan, 2020)

Hasan further argued that poor leadership of some university administrators by not involving staff union members in decision making and that the dismissal of some academics without following due process were indication of poor governance which made many academic staff de-motivated to serious academic pursuit. Bamiro (2012) added that the unfavourable governance which led to series of strikes resulting to closure of some institutions for up to 177days since 1993 to the present day accounted for low quality in higher education in Nigeria. This unhealthy situation could lead to strained relations between university staff unions and management, increased hostility and aggression and increased mutual suspicion which are all threats to mutual co-existence for the attainment of good quality in institutions of higher learning

Higher Education in the New Normal

The coronavirus which is popularly known as COVID-19 has disrupted the global educational system as most countries around the world have resulted in temporarily closure of all educational institutions in an attempt to contain the spread of the pandemics. According to the report by UNESCO (2020), the closure of educational institution has impacted over 91% of the world's student population. The ripple effect of this pandemic has been felt by both the educators and students in primary, secondary, colleges and universities as academic sessions were disrupted after the coronavirus was declare a public health emergency. This has left many students and educators in a rude shock as some of this institution were at the point of preparing for examination, admitting of freshmen, beginning of a new semester, amongst others. Universities around the world including Africa have resulted in looking for ways to cope and adapt to academic changes as a result of this pandemic.

This COVID-19 pandemic has shaped a new normal for the higher education sector across the globe from transforming the online learning platform, restructuring application processes, and stimulating crisis management strategies. The COVID-19 outbreak has opened up the importance of online education and distance learning however, just a handful of the world's education that are taught online. The pandemic has resulted in a more severe consequence on schools that

do not possess the online learning platform. The COVID-19 pandemic ravaging the world have taken its effects on many sectors of the economy especially in Nigeria. This effect is also evident in the Nigeria educational sector has the academic session was halted by the Federal Ministry of Education in order to curtail the spread of this virus in educational institutions. Although, this decision came as a shock to many educational institutes as many of these institutions were not prepared for the sudden disruption, others have seen it as a step in the right direction. The challenge then remains how will this pandemic affect students and academic calendars? Hence, the use of e-learning as an alternative learning method. However, despite the immense benefits of the e-learning platforms available, not many Nigerian universities have embraced it. Poor budgetary allocation, corruption and preparedness are contributing factors to the inability of many public tertiary institutions to embrace e-learning during the global COVID-19 pandemic in Nigeria. The new normal has posed a challenge for teachers who had to shift their approach overnight from in-person teaching to virtual teaching having to adapt to the complex digital world and imbibing the technical expertise.

This new normal is seeing teachers redesign and re-adapt the curriculum with an emphasis placed on relevant individualized learning. Technological prowess is still a challenge that can be solved, but, in my opinion, the biggest barrier that e-learning faces in Nigeria is access to e-learning. Without a uniform digital infrastructure, both students and teachers are facing unprecedented challenges. Electricity is crucial for virtual classrooms both for powering devices and internet connectivity. With limited or absent access to the internet and power supply plays a major concern for remote learning. This is the challenge that the edu-tech sector, in collaboration with service providers, should address to reach the length and breadth of the country.

COVID-19 has created a long-lasting impact on the world and its outlook to almost everything. We used to consider e-learning to be a supplementary tool for school or college education which has now shifted to as a primary source of learning. If approached in the right manner, e-learning can redefine the education system of the country.

E-Learning

The term e-learning connotes electronic method of learning which is associated with computerized learning in an interactive interface at the convenience of both the learners and lecturers. E-learning also implies educationally technology. According to Eze et al. (2018), e-learning education is concerned with the holistic in corporation of modern telecommunication equipment and ICT resources into the education system. Ndula (2013) posits that the word “e” should refer to “everything, everyone, engaging and easy” in addition to "electronic". The benefits of the e-learning include better content delivery, interactivity, quality content delivery and confidence of both learners and lecturers in the educational sector. Despite the advantages of the e-learning, it is still at its infancy and early adoption stage in Nigeria due to its dynamic structure.

Challenges of E-learning in Nigeria

E-learning is still confronted with a lot of challenges in Nigerian Universities especially during this pandemic as this is the only medium available for learning. One of these challenges is;

i. Shortage of power supply

The epileptic power supply in Nigeria especially in rural areas as there is no guarantee of at least two hours of power supply at a stretch. Irregular power supply in Nigeria is seen as an age-long problem which has affected almost every aspect of Nigeria's economy with no exception to the educational sector. This unstable poor power supply has caused a major setback for technological advancement of many universities in Nigeria. Most rural areas in Nigeria where some students are resident are not even connected to the national grid and as such, this student will experience difficulty in utilizing the e-learning platform effectively. Also, shortage in power supply have brought difficulty in powering of educational gadget such as smartphones, laptops and desktop computers needed for learning.

ii. High cost of internet data services

The internet service required to connect to this e-learning platform sometimes. Today’s students are exposed to a technological era in

which they are engulfed with an array of mobile technology and learning tools to include, Ipads, computers, iphones, interactive audio or video-conferencing, webcasts, instructional videos via CD-ROMs or DVDs and computer-based systems transmitted through the Internet (The National Centre for Education Statistics, 2011). Electronic books can reduce the cost of and ensure use of most current reading materials, and a larger variety of sources. The growth of these devices has provided instructors new and innovative tools to promote teaching and learning for students with varied educational needs. Not only are technology devices necessary for success in the online environment, but the design of the online program, including the instructor, the curriculum, and student support services accompanied by a strong sense of community and connectedness within the program, are significant as well requires a lot of data. The cost of purchasing the data bundle is so high which might be difficult for both students and lecturers. In cases where there is even data, poor internet connectivity by network providers is of major concern especially when it comes to video conferences where both the students and lecturers have to interact. The cost of accessing the internet in Nigeria is still on the high side. Hence, some students find it a challenge to afford.

iii. High cost of Laptops and other Digital Tools

The cost of a personal computer (PC) and Laptop are still very high in Nigeria considering the income level of an average worker in the country. Aydin (2007) posits that few students that are privileged to have a PC/Laptop are not connected to the internet as this do attract extra cost which they cannot afford. Mobile devices provide education to students by allowing them to download necessary materials, immediately, to help fulfill requirements for issues they are confronted with daily. Digital learning tools such as webcams, electronic books, and audio devices for recording lectures, to be used by students at their convenience, are effective tools offered by educational institutions to increase students' success rate with course requirements.

iv. Poverty

This poor internet connectivity and high cost of data has resulted in low attendance of students during the online classes. To Aduke (2008), this low online class attendance has also been linked to the poverty situation in the country as some families and students might not be able to afford basic needs such as food and clean water let alone the expensive gadgets or resources to sustain them for online learning.

v. Incapability of Lecturers

Another challenge posed by the e-learning education according to Ajadi et al. (2008) is the incapability of lecturers to assists learners develop the skills and training required to make the e-learning platform effective. E-learning creates room for complete absence of physical personal interactions between students and lecturers and among their colleagues.

Constraints of ICT as a change Agent for Higher Education in Nigeria

The utilization of ICT in education across the nations over the years has been militated by some factors. However, in Nigeria, the irregularity in the political conditions gives no room for continuity in ICT utilization in schools in the past years. Over the years, political situations in Nigeria have been used to entrench mediocrity, corruption in high places, misplace of priority and poor consumer culture have affected the use of ICT in the education sector. Hence, the various factors militating against effective utilization of ICT as a change agent for higher education in Nigeria are discussed as follows:

(i) Inadequate Computer Certified/Trained Teachers

The absence of trained teachers in computer to teach practical aspects of computer skills militate against proper utilization of ICT in Nigerian higher institutions. A large number of lecturers are computer illiterates; and such lecturers would find it extremely difficult to deliver the appropriate education and training required by the information age of the 21st century for their students as stated by Baylor & Ritchie, 2002.

(ii) Poor funding

The overall educational system in the country is underfunded as explained by Aduke (2008). Therefore, available funds are used to solve more urgent and important needs of the institutions. Low level of funding has resulted into inadequate ICT facilities in schools. This situation has been a major constraint to making Nigerian educational institutions ICT compliance.

(iii) Irregular power supply

Power supply all over the country is Epileptic. Ajadi et al. (2008) stated that if electricity supply is not stable and constant, it is difficult to keep ICT equipment and facilities such as computers and their accessories functioning properly. This problem also denies the rural dwellers the benefit of using ICT.

(iv) High cost of Digital materials and other equipment

The cost of equipment in a country like Nigeria with a battered economy is very high. Ajadi et al. (2008) and Aydın (2007) stated that apart from the basic computers, other costs associated with peripherals such as printers, monitors, papers, modem, extra disk drives, and other soft wares are beyond the reach of most higher institutions in Nigeria. Also, most of these institutions cannot avoid the exorbitant internet connection fees.

(v) Lack of Relevant Software

Teaching with ICT facilities is an onerous task without up-to-date equipment and supplementary materials. According to Hege (2019), there are clear indications from many countries that the supply of relevant and appropriate software is a major obstacle obstructing wider application of the computer.

Opportunities available in the use of E-learning

In spite of the challenges encountered in integrating and embracing the e-learning system, it has become the most preferred platform to learn during global pandemic periods such as the COVID-19 where movement is restricted and institutions of learning are on lockdown. According to Marc (2002), the adoption of e-learning system for

universities will enable the efficiency of knowledge as both students and lecturers will have easy access to a large amount of information within the global village.

i. Limited Space

In most universities, class space for lectures is usually a problem as sometimes there is clash in timetable or overpopulated students. The e-learning system will completely reduce the issues of insufficient classrooms for lectures as student can easily take the lectures online without any disruption at their convenience (Smedley, 2010).

ii. Comfortability

E-learning affords students and lecturers to participate in class in their comfort zone with basic amenities they need when compared to the traditional teaching method where sometimes these basic amenities are unavailable for conducive learning. This is supported by the findings of Pingle (2011) that undergraduates in India have a higher acceptance level of comfort working with computers and other e-learning packages than the traditional face-to-face classroom.

iii. Effective communication

E-learning provides a platform for students to interact with themselves through the discussion forum which eliminates the barrier of participation. It also allows for effective communication and fosters relationship between students and lecturers. This is supported by the findings of Wagner et a.l (2008) that e-learning allows students to study at their open pace and convenience as the lecture material is readily available and the content delivery of the lecturer is quite accessible to them. Hence, it increases satisfaction and decreases stress.

iv. Exposure

The knowledge of e-learning will expose both lecturers and students to the reality of the world outside the classroom since the world is a global web. Holmes and Gadner (2008) also opined that e-learning exposure will ease the student's integration into organizations where such platforms are operational.

v. Cost Effective

E-learning can be said to be cost effective as it reduces travel time and infrastructural development in terms of buildings. Also, the cost benefit of e-learning in training students is lesser than that of physical (face-to-face) contact. This was arrived at after considering some factors and findings made by Zhang et al (2006) namely: the number of students trained; distance to be travelled; time of training. The value of face-to-face class contact content development, distribution and maintenance cost are exclusively high as compared to e-learning which is of lower cost. All these shows hat adoption of e-learning tends to solve educational challenges especially at a time such as the COVID-19 pandemic.

Conclusion and Recommendations

The study concluded that the present world pandemic is making the educational sector to look inward. Institutions are now embracing e-learning which serves as alternative to the face-to-face contact learning thereby helping the institutions cover gaps the pandemic might cause the institutions academic calendar. The adoption of e-learning during the COVID-19 pandemic has exposed a lot of lapses and gaps to be filled in the Nigerian educational system. This is most obvious amongst the public universities. The challenges of e-learning in Nigeria ranges from irregular power supply, high internet subscription costs, poor internet access amongst other factors. The applicable opportunities associated with the embracing e-learning includes lecturers ‟ /learner's convenience, exposure and cost benefits. This study recommended that government needs to be more firm in their handling of public universities administration and help prepare them for the adoption of ICT and e-learning in Nigerian institutions. Furthermore, private universities should be proactive in ameliorating the challenges identified in this study and build on the opportunities e-learning offers institutions even post COVID-19. Furthermore, effective government policies that will sustain workable social infrastructures that will be sustainable even during unforeseen crisis is required. Finally, government should infuse more monetary

resources in Nigeria's educational sector so that its institutions can compete globally.

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COGNITIVE BEHAVIOUR THERAPY ON THE MANAGEMENT OF PSYCHOLOGICAL DISTRESS AMONG NEWLY DIAGNOSED PEOPLE LIVING WITH HIV/AIDS IN IBADAN, NIGERIA

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Abstract

This study sought to examine cognitive behaviour therapy in the management of psychological distress among newly diagnosed people living with Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) in Ibadan, using gender as moderating variable, Nigeria. Freshly detected people living with HIV/AIDS (PLWH/A) are challenged with glitches of denunciation or stigmatisation and exposure of status. This situation poses psychological distress on these set of people. Psychological distress refers to mental and emotional state of vulnerability and behavioural collapse. Numerous studies have been done on HIV/AIDS and its effects on the society. The problems of stigmatization and disclosure have however been treated only very lightly, for instance, like jingles on the radio and television but have not been empirically documented in Ibadan, Nigeria.

Randomised pre-test/post-test/control-quasi experimental research design was used for this study. Beck's cognitive theory offered the theoretical framework for the study. Purposive sampling technique was used to select (2) two hospitals and (60) sixty male and female newly diagnosed PLWHA in Ibadan as sample size. These hospitals provide healthcare services to PLWH/A. Thirty (30)male and female participants were randomly selected using fish bowl without replacement method from the first hospital into the experimental group and the other (30) thirty male and female participants from the second hospital into the control group. Participants in the experimental group were exposed to eight sessions of cognitive behaviour therapy. Participants in the control group were given health talk as placebo.

Beck's Depression Inventory (α = 0.81) was used to screen the participants for psychological distress. The Kessler Psychological Distress (K10) (r = 0.90) was used for data collection. Data were analysed using analysis of covariance (ANCOVA) and Duncan post–hoc test at 0.05 level of significance. The study concluded that clinical and counselling psychologists should adopt the CBT intervention in the management of psychological distress among people living with HIV and other epidemic infectious diseases like the Corona Virus.

Keywords: Psychological distress, People living with HIV/AIDS, Cognitive behaviour Theory.

Introduction

Human immune-deficiency virus/acquired immune deficiency syndrome (HIV/AIDS) is one of most common deadly diseases in the world beside the Corona Virus. This is due to its overwhelming impact on the countries of the world. The spate of this disease has been found capable of initiating responses like discrimination, anxiety, depression, hopelessness, stigmatization, isolation, and subjugation as persons affected by this health condition is often associated with psychological distress. At the discovery of this disease, there was no cure. Therefore, the affected persons are thought to be as good as dead especially form fear and minute-by-minute psychological distress. It should be particularly noted that the fear and distress of contracting this disease is even enough to cause death. It has been reported in some quarters in Ibadan, Nigeria that some people died just after been screened positive by hanging, poisoning and many more other ways without even waiting to die from the effect of the disease in itself. Such deaths can be categorized as fallouts from psychological distress.

PLWHA are saddled with rapid drop or decline of glycoprotein found in the surface of immune cells such at T-helper, monocytes, macrophages and dendritic cells, referred to as CD4 counts (body immunity). Mall, Breuer, Myer, Struthers and Joska (2011) suggests that there is a strong connection between the physical state of individuals and their mental wellness. Although there are medical interventions and repressive drugs for the PLWH/A, infections and diseases, but their challenges are supplementary. According to

Valente (2003), depression is one of the most common symptomatology of HIV infection. As a chronic and life-threatening illness it can be stressful to manage,

The global Human Immunodeficiency Virus (HIV) epidemic continues to expand at an alarming rate of about 3 million new infections yearly (UNAIDS, 2013). Poverty, low literacy levels, high rates of causal unprotected sex in the general population, low levels of condom use, cultural and religious factors are major factors in transmission of HIV in Nigeria (NACA, 2007). Most Nigerians know about HIV/AIDS and the routes of transmission (Nigerian Demographic Health Survey, 2013). It has been recorded that among women attending antenatal clinics, the prevalence of HIV initially steadily increased from 1.8% in 1991 to 5.8% in 2001, and then has now shown a decline to 3.4% in 2012 (CIA World Fact-book, 2012). Mother to child transmission is an overwhelming source of HIV infection in young children, contributing about 90% of the total disease burden. Most studies estimate the probability that an HIV positive woman's baby will have the virus as ranging from 15% - 25% in an industrialized country (in the absence of antiretroviral treatment), an up to 40% in the developing countries where breast feeding is exclusively practised. About 1600 children are born with HIV daily worldwide. HIV infection and AIDS constitute a major cause of infant and under morbidity and mortality in this decade particularly in sub-Saharan Africa.

Issues of health and wellness are not just worrisome and psychologically incapacitating alone among PLWH/A, rather, they could become more seriously hurting especially as they are life-threatening and defaming. For more than a couple of decades, the world has been confronted with the issues arising from the menace and prevalence of HIV/AIDS. Olley, Zeier and Seedat (2005), Emlet (2007), Chikezie, Otakpor, Kuteyi and James (2013), in their numerous studies, posit that more and more infections of the virus are being recorded globally. The statistics of the infection across the globe has not only been bothersome but also scratchy with the blight. Not until recently that the Corona Virus took centre stage in the world, Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) have always been regarded as the most

dreaded disease on the globe. Therefore, PLWH/A are stigmatized, discriminated against socially and physically, isolated and treated with suspicion sometimes because of how deadly the disease is. All the above indices bring about psychological depression, emotional trauma and physiological exhaustion among PLWH/A.

In many of the developing countries including Nigeria, HIV infection is fast becoming the common complication of pregnancy, while AIDS is one of the major causes of child death. Brandt (2009) reveals that prevention of mother-to-child transmission of HIV infection is now a high priority in these countries and has been the rallying point for enhancing prevention efforts.With the daunting statistics of the number of people living with Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) (PLWH/A) and increasing medical provisions like the Highly Active Antiretroviral Therapy (HAART) which could improve the long term outlook of PLWHA and decrease HIV-related mortality, HIV continues to pose a number of psychological challenges. Brown and Vanabe (2011) affirm that HIV poses a number of unique psychological challenges associated with living with the chronic, stigmatized disease. The Sub-Saharan Africa carries the largest burden of the global pandemic. UNAIDS (2004) estimated that more than 25million Africans have been infected with HIV.

Managing life challenges and living with HIV can be pretty tough; it induces mental health problems and can lead to psychological distress which includes depression, anxiety disorders, cognitive dysfunction and insomnia. Robbins and Phillips (2004) reveal that there is a strong connection between people's physical state and mental wellness. Issues of health are constantly not only worrisome and psychological, but could become more serious and traumatising especially when they are life-threatening and pillorying. Psychological distresses are the leading causes of disability and mortality worldwide (Olisah, Baiyewu and Sheikh, 2010). It is highly co-morbid in human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS) (Adewuya, Afolabi, Ola, Ogundele, Ajibare and Oladipo, 2008). The psychological distress attached to PLWH/A not only affects the individual's access to health services and employment in Ibadan, but also his well-being, social,

and emotional state. Psychological distress has been reported to be common among persons living with HIV/AIDS (PLWH/As) compared with apparently healthy populations. Also, James, Morakinyo, Eze, Lawani and Omoaregba (2010) reveal that the prevalence rates for depression among PLWH/As vary depending on the setting of the study butgenerally rates averagely between 10% and 30% in that population. Investigating the relationship between depression and HIV/AIDS, study has it theorized that immune changes as a result of viral infections may be responsible for the height in ratings (Goar, Obembe, Audu and Agbir, 2012). Other scholars like Aina (2007) argue that psychological distress of an individual's HIV status may influence depression as well as other psychiatric disorders like anxiety, psychosis, and posttraumatic stress. Another possible mechanism is stigma. This is especially relevant in a developing country like Nigeria, where the illness is highly stigmatized and PLWHAs feel isolated and discriminated against (Monjok, Smesny and Essien, 2009).

The issues of psychological depression and HIV/AIS on PLWH/A do not prioritise gender. Research has consistently documented that both gender are vulnerable to experience significant depression, anxiety, and low levels of positive affect when diagnosed with HIV/AIDS. Linley and Joseph (2004) suggested that male and female living with HIV/AIDS have their own personal strengths and weaknesses for psychological distress. In the same research light, Danoff-Burg, Agee, Romanoff, Kreme and Strosberg (2006) support Linly and Joseph' work by enacting that the high prevalence of depressive symptoms, anxious symptoms, and low levels of positive affect among women living with HIV/AIDS and the growing number of women who are living with HIV/AIDS is congruent to their male counterparts.

Cognitive behavioural therapy (CBT) is a category of psycho-therapeutic treatment that is used to support people to acquire how to detect and alter disparaging or distressing thought patterns that have negative effect on behaviour and emotions. It is a psycho-social intervention Hollon, Beck and Lambert (2010) that aims to improve mental health. Field, Beeson and Jones (2015) discovered that CBT focuses on challenging and changing cognitive distortions, for

instance, thoughts, beliefs, attitudes and behaviours, towards improving emotional regulation, Beck (2011) and the development of personal coping strategies that target solving current problems. Initially, CBT was designed to treat depression, but its uses have been expanded to include treatment of a number of mental health conditions, including anxiety (McKay, Sookman, Neziroglu, Wilhelm, Stein and Kyrios, 2015). CBT includes a number of cognitive or behavior psychotherapies that treat defined psychopathologies using evidence-based techniques and strategies (Johansson and Andersson, 2012). It is based on the combination of the basic principles from behavioral and cognitive psychology. Beck (2011) states that CBT is different from historical approaches to psychotherapy like the psychoanalytic approach where the therapist looks for the unconscious meaning behind the behaviours and then formulates a diagnosis. Instead, it is a "problem-focused" and "action-oriented" form of therapy, meaning it is used to treat specific problems related to a diagnosed mental disorder. The therapist's role is to assist the client in finding and practicing effective strategies to address the identified goals and decrease symptoms of the disorder (Schacter, Gilbert and Wegner, 2010). CBT is based on the belief that thought distortions and maladaptive behaviours play a role in the development and maintenance of psychological disorders (Field, Beeson and Jones (2015). This is in order that symptoms and associated distress can be reduced by teaching new information-processing skills and coping mechanisms (Schacter, Gilbert and Wegner, 2010).

When compared to psychoactive medications, review studies have discovered that CBT alone is effective for treating forms of depression (Gartlehner, Wagner, Matyas, Titscher, Greimel, Lux, Gaynes, Viswanathan, Patel and Sheila, 2017). Other anxiety, post-traumatic stress disorders McGuire, Piacentini, Brennan, Lewin, Murphy, Small, Brent and Storch (2014) substance abuse, eating disorders and borderline personality disorders are also treated with the CBT. Davidson, Gumley, Millar, Drummond, Macaulay, Tyrer, Seivewright, Tata, Norrie, Palmer, Murray and Heather (2006) reveal that CBT is most effective when combined with medication for treating mental disorders such as major depressive disorder. (TADS), Treatment for Adolescents with Depression Study (2016) posits that

CBT is also recommended as the first line of treatment for the majority of psychological disorders in children and adolescents, including aggression and conduct disorder. Benjamin, Puleo and Settipani (2011) in their study found that other bonafide therapeutic interventions were equally effective for treating certain conditions. In line with the above, Shedler (2010) also suggested that along with interpersonal psychotherapy (IPT), CBT is recommended in treatment guidelines as a psychosocial treatment of choice.

A brief intervention using cognitive behavioural therapy for depression was used by Teasdale and Fennell (1982) to study firstly perhaps or otherwise, reductions in the frequency and intensity of negative thoughts would lessen depression among depressed clients and secondly maybe one factor of the cognitive-behaviour therapy bundle would yield anticipated transformation. A within-subject design was used with each depressed client [five female clients identified by the Research Diagnostic Criteria (RDC) and other criteria)]: thirty eight minutes of trying to alter depressive thought was compared to equivalent of time exploring depressive thoughts. The comparison conditions were embedded within the general therapeutic content of cognitive-behavioural therapy, such that all subjects were a part, of a treatment regimen with nonspecific factors and so on available to all. For all subjects, depressive thoughts were identified, and clients rated how strongly they believed the thoughts (for example, "I will always be on the wheel chair as a person"). In the thought change condition, the therapist encouraged the client to re-evaluate her thinking, to examine the full range of evidence, to consider alternatives, and to review other types of action. In the thought exploration condition, the therapist sought to identify more relevant information by questioning and providing reflective statements. Subjects rated their belief in the target thoughts and rated their level of depression. The researchers also timed the subjects' natural pace of counting from 1 to 10. The procedure was repeated, using the alternate experimental condition, at a later point in therapy.

Ibudeh (1991) examined the clinical efficacy of cognitive therapy, social skills training, and progressive muscular relaxation therapy for the treatment of clinical depression, however, forty-eight

(twenty-four males and twenty-four females) mild to severely depressed clients were randomly assigned to one of the three experimental groups and the control group. The clients' age ranged between 18 and 45 years, with a mean age of 24.71 years, and a standard deviation of 2.38. Treatment subjects met in small group of twelve for one hour (60 minutes) weekly sessions over 12 weeks. Level of depression was assessed at four points spaced at 4-week intervals for the pre-treatment, mid-treatment and post-treatment, and a 2-month follow-up. Dependent or outcome measures included four self-report clinical scales and five self-report non-clinical scales. The results suggested that there were marked improvements on all measures except the Ibudeh Social Skills Rating Scale (ISSRS) across the treatment period in the three treatment conditions but not in the non-treatment condition. Teasdale, Scot, Moore, Hayhurst, Pope and Paykel (2001) examined the cognition medication of relapse prevention by cognitive therapy (CT) in a trial of 158 patients with residual depression. Score based on agreement with item content of 5 questionnaires of depression-related cognition provided no evidence for cognitive mediation. A measure of the of response to those questionnaires, the number of times patients used extreme response categories ("totally agree" and "totally disagree"), showed significant and substantial prediction of relapse, differential response to CT, and conformity to mediational criteria CT reduced relapse through reductions in absolutist, dichotomous thinking style.

Psychological distress which includes depression, anxiety, hopelessness and many more are the leading causes of disability and mortality worldwide. The WHO (2008) estimates depression to be the leading cause of disability-adjusted life years, contributing about 12% of all disabilities. In Nigeria psychological distress, particularly depression has been found to be five times more common among People Living with HIV/AIDS (PLWHA) than in apparently healthy populations (Chikezie, Otakpor, Kuteyi and James, 2013). PLWH/A have also been found to have greater psychological distress symptom severity compared to non-infected populations. Studies carried out in different regions of Nigeria also reported varying prevalence rates for psychological distress in PLWH/A.

Although several drugs have been discovered from the developed world to minimize the problem of HIV/AIDS, there is still no cure. None of these attempts have focussed on treating the psychological aspect it has on PLWH/A. The fall-out issues associated with this disease have not however, been removed in Nigeria, if left unattended to, there will still be more ravaging effects of unwanted or premature deaths among PLWH/A. Several studies have also been done on HIV/AIDS and PLWH/A especially on how these people face the scourge of psychological depression as a result of the infection. Evidence from a number of treatment trials suggests that depression in patients with HIV can be effectively treated. Colman (2006), in his study, revealed that HIV-infected individuals often experience depression because they feel that they have lost so much in life-and that they themselves are to blame for it. It is in the light of the foregoing that this study investigated cognitive behaviour therapy on the management of psychological distress among newly diagnosed people living with HIV/AIDS in Ibadan, Nigeria.

Research Questions

1. Will the PLWH/A in Ibadan adhere to the use of CBT as a psychological therapy on the management of psychological distress?
2. Will CBT have more effective relief on male than female among PLWH/A in Ibadan after being subjected to CBT treatment?

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

1. There is no significant interaction effect of CBTon psychological distress amongPLWH/A in Ibadan.
2. There is no significant effect size of CBT on psychological distress among PLWH/A in Ibadan.
3. There is no significant interaction effect of CBT and gender on psychological distress among PLWHA in Ibadan.

Methodology

This study employed pre-test, post-test, control group, quasi experimental research design. The population was all newly diagnosed with HIV (PLWHA) and who attend monthly routine therapy

in HIV-designated hospitals (General Hospital Jericho, Ibadan and Adeoyo Maternity Hospital, Ibadan) in Oyo State, Nigeria. The probability sampling technique was used to select the two hospitals with the sample size of (30) thirty male and female newly diagnosed PLWHA as participants who were randomly sampled from the two hospitals. These are the major recognised and most efficient government hospitals in the state. Thirty (30) participants who have been diagnosed with HIV were conveniently selected. The Kessler Psychological Distress Scale was used for the study.

Psychological distress of the diagnosed HIV positive participants was measured using the Kessler Psychological Distress Scale (K10) by Kessler, Barker, Colpe, Epstein, Froerer and Hiripi (2003). The 10-item questionnaire is a global measure of distress based on questions on anxiety and depressive symptoms that a person has experienced in the most recent 4 week period. The K10 was also designed with item response theory models to optimise its precision and sensitivity in the clinical range of distress, and to ensure a consistent sensitivity across gender and age groups (Kessler et al. 2002). The scale was used to evaluate how often participants' experienced anxio-depressive symptoms (e.g., nervousness, sadness, restlessness, hopelessness, worthlessness) over the last 30 days. Each item is scaled from 0 (none of the time) to 4 (all of the time) and the total score was used as an index of psychological distress. Several studies showed no substantial bias for the K10 in relation to gender, education (Baillie 2005) or age (O'Connor &Parslow 2010). The scale has an internal consistency reliability of 0.88.

Experimental Group: Cognitive Behaviour Therapy (CBT)

Session 1: Pre – Test administration
Session 2: The Concept of HIV/AIDS and Life skill counselling on PLWHA
Session 3: Social Skills Deficits
Session4: Integration of Change Self and Body Image
Session5: Expression and Exploration of Emotions and Thoughts
Session6: Coping Skills
Session7: Self-Mastery Skills

Session8: Post-Test Administration

Procedure for Data Collection

Ethical approval was obtained from the Oyo State Ministry of Health with reference number AD/13/479/89 for the purpose of the research. Eight weeks of two intervention sessions were used for the therapeutic group: Cognitive Behaviour Therapy. The Kessler Psychological Distress Scale was used as the main instrument to record the pre and post-tests measures.

Procedure for Data Analysis

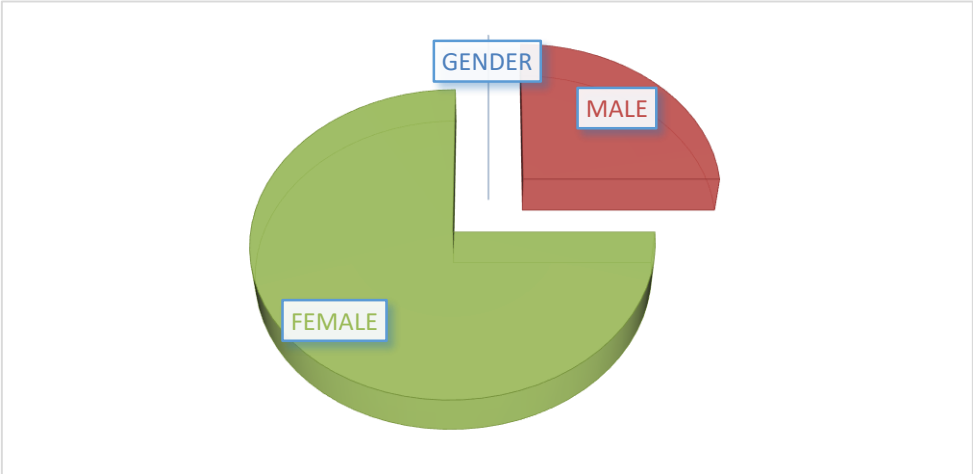
Data was analysed using analysis of Covariance (ANCOVA) at 0.05 level of significance to determine the main and interaction effects of the independent and moderating variables on the dependent variable (psychological distress). Also, Scheffe Post-hoc analysis was used to determine the extent of significance of the main effects of the treatment, CBT.

Results

Table 1. Demographic information showing Distribution of Gender

Variable	**Gender**	
CBT on psychological distress among (PLWH/AS)	**Male 10**	**Female 20**
Percentage	**30**	**70**

Fig. 1. Demographic representation of the research population.



Fig, 1 above (pie chat) shows demographic representation of the participants(10) ten (30.0%) were males while (20) twenty (70.0%) were females.

Summary of Analysis of Covariance (ANCOVA) of Post-Test Scores of Psychological Distress of Participants showing the Mean and Interaction Effect of Cognitive Behaviour Therapy and Gender.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2948.501a	11	268.046	16.598	.000	.792
Intercept	80.862	1	80.862	5.007	.030	.094
Prescore	1815.347	1	1815.347	112.413	.000	.701
CBT	132.777	2	66.389	4.111	.022	.246
Gender	9.334	1	9.334	.578	.451	.012
cbt * gender	10.441	2	5.221	.323	.725	.013
Error	775.149	48	16.149			
Total	21785.000	30				
Corrected Total	3723.650	29				

a. R Squared = .792 (Adjusted R Squared = 10.441)

Results from this study revealed that there was a significant main effect of cognitive behavior therapy on psychological distress of the participants ($F_{2,48} = 4.111$; $P < 0.05$, $\tilde{n}2 = 0.246$). **Hypothesis one** which states that there is no significant main effect of CBT on psychological distress among PLWH/A in Ibadan was rejected. This means that there is significant difference between the mean of post-test psychological distress of participants that were exposed to CBT and those in the Control group. This implies that the participants in the experimental group benefitted from the CBT as they were able to get lower psychological distress scores compared with their control group

counterparts. Hence, hypothesis one was rejected statistically because there was a significant main effect of CBT on psychological distress of the participants.

Hypothesis two which states that there is no significant effect size of CBT on psychological distress among PLWH/A in Ibadan was rejected. The results showed that CBT had an effect size of 66% of the mean score. This implied that the effect size is higher therefore there was a positive relationship between cognitive behaviour therapy on psychological distress among PLWH/A.

Hypothesis three which states that there is no significant interaction effect of CBT and gender on psychological distress among PLWH/A in Ibadan was rejected. The results showed that CBT and gender had a 5.221 mean score with a significance score of .725. It therefore, means that there was a significant interaction effect between CBT and gender on the psychological distress among PLWH/A.

Discussion of Findings

The findings in hypothesis one showed a significant difference between the mean of post-test psychological distress of participants that were exposed to CBT and those in the Control group. This simply implies that the participants in the experimental group benefitted from the CBT as they were able to get lower psychological distress scores compared with their control group counterparts. Based on the nature of cognitive therapy, is based on the fundamental assumptions that cognitive activity affects behaviour, cognitive activity can be monitored and changed, and cognitive changes can lead to desired behavioural changes (David-Ferdon and Kaslow, 2008). However, the treatment procedure involves the identification and modification of depressive inaccurate cognitions. The therapist helps clients to recognize dysfunctional beliefs. This involves the therapist asking client a series of easily answerable questions that lead participants to recognize dysfunctional beliefs for themselves. This is in line with previous work by Gartlehner, Wagner, Matyas, Titscher, Greimel, Lux, Gaynes, Viswanathan, Patel and Sheila (2017) who reveals that when compared to psychoactive medications, review studies have

discovered that CBT alone is effective for treating forms of depression. This is also supported by the findings of McGuire, Piacentini, Brennan, Lewin, Murphy, Small, Brent and Storch (2014) that discovered that other anxiety, post-traumatic stress disorders substance abuse, eating disorders and borderline personality disorders are also treated with the CBT. The discovery in this research study is in tandem with the findings of Hollon, Beck and Lambert (2010) who reveal that CBT is a psycho-social intervention that aims to improve mental health. This is empirical because the findings of this study show that there is positive significance of CBT on the management of psychological distress among newly diagnosed people living with HIV/AIDS in Ibadan, Nigeria.

The results in hypothesis two also revealed the effect of cognitive-behavioural on the psychological distress of persons living with HIV/AIDS. A similar study showed the effect of cognitive-behavioural therapy on the management of psychological distress among people living with HIV/AIDS in reducing depression, stress, and anxiety effects (Molassiotis, Callaghan and Twinn, (2002). The results of this study showed the effect of cognitive-behavioural therapy on stress, anxiety, and depression in people living with HIV/AIDS. This study is in association with past studies by Sabet, Khalatbari and Ghorbani, (2013), in a psychological approach study in China on three groups of people with HIV (CBT, group support, and group counselling), the results showed that CBT had a better effect on people's psychological mood, including depression, anxiety, and stress. However, regarding the duration of the study's effectiveness one month after the end of counselling sessions, stress, anxiety, and depression scores decreased compared to before the intervention. In another study, the effectiveness of cognitive-behavioural counselling on mental health was reported to range from six to 12 weeks.

Also, The result of this hypothesis agrees with those of Kennard, Clarke and Weersing (2009), Wykes, Huddy, Cellard, McGurk and Czobor (2011), and Bellack, Bennett, Gearon, Brown and Yang (2006). They reveal that cognitive therapy is effective for the management of distress. However, there are two potential explanations for the decrease in the depressive symptoms among the participants (a) because of the establishment of effective therapist–

client relationship that was characterized by the therapist interest, empathy, non-judgemental acceptance and honesty, high level of the participants' capacity for interpersonal relationship, trust in the therapist expertise, and encouragement of participants collaboration in the treatment protocols; (b) because the treatment techniques employed several different treatment components that addressed the HIV-related stressors and stress responses occurring in cognitive, affective, behavioural and social realms. Furthermore, the poor management of distress among the participants in the control group may be due to the fact that they simply have not learned to employ the effective tactics towards managing their distress.

The result in hypothesis three showed that cognitive behaviour therapy (CBT) and gender had a 5.221 mean score with a significance score of .725. It therefore, means that there was a significant interaction effect between CBT and gender on the psychological distress among PLWH/A. Studies on psychological distress have consistently reported gender differences: as women experience more distress than men (Kuehner, 2003; Denton, Prus & Walters, 2004). An investigation by Matud (2004) also discovered how differential emotional reactivity and exposure to stressors contribute to gender differences in psychological distress. However, in their study women report greater distress than men, however, the question is whether women genuinely experience greater distress. In addition, he found that men kept emotions to themselves more than women, and that women expressed emotions more freely than men, which may appear more distressed.

Conclusion

From the result of analysis and discussions on this study therefore, it could be concluded that participants in the experimental group benefitted from the CBT as they were able to get lower psychological distress scores compared with their control group counterparts therefore, there is a significant main effect of CBT on psychological distress of the participants. The effect size of CBT on psychological distress is high therefore there is a positive relationship between cognitive behaviour therapy on psychological distress among

PLWH/A. There was also a significant interaction effect between CBT and gender on the psychological distress among PLWH/A.

Justification and Novelty of the Study

The main purpose of this study is to determine the effectiveness of cognitive behaviour therapy on the management of psychological distress among newly diagnosed people living with HIV/AIDS in Ibadan, Nigeria. Findings of this study will be useful for stakeholders such as: National Agency for the Control of HIV and AIDS, (NACA), State Agency for the control of AIDS (SACA), Local Action Committee for HIV and AIDS (LACA), and United State Agency for International Development (USAIDS), researchers, and people living with HIV/AIDS. The findings of this study would also be useful for the counselling psychologists who would pick suitable counselling skills for PLWHA, their family members/caregivers, the health team, including the doctors, nurses as well as health policy makers.

Recommendations

(i) Considering the results and findings in this study, it is therefore recommended that CBT should be used as an adjunct therapy in alleviating the scourge of HIV/AIDS in Ibadan, Nigeria.

(ii) With scarce resources and the high mortality rate recorded from HIV/AIDS in sub-Saharan Africa efforts aimed at reducing this rate should be encouraged more because Africans have different strains and different environment.

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KNOWLEDGE, ACCESSIBILITY AND UTILIZATION OF ICT AMONG STUDENTS OF NATIONAL OPEN UNIVERSITY (NOUN) IN SOUTH-WEST NIGERIA

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Abstract

Understanding of the accessibility and barriers in the utilization of ICT facilities among students *are key to enhancing the deployment of ICT facilities for academic purposes. Hence, this study assessed the knowledge, accessibility and utilization of ICT variables at National Open University of Nigeria in South Western Nigeria (Ogun, Lagos & Oyo). The study was guided by four specific objectives, and these were to: assess the students' knowledge about ICT, examine the students' accessibility to ICT, determine the level of utilization of ICT among students and ascertain the barriers to effective utilization of ICT among students at NOUN. The study adopted a cross-sectional descriptive design which enabled the researcher in answering the research questions. A set of 438 structured questionnaires were administered to the respondents and 401 were fully filled and returned. This gave a 91.6% response rate. The SPSS version 22.0 was used for the data analysis. The statistical techniques used included frequency and percentage distribution, graphical illustrations, chi-square cross tabulations and Pearson correlations. The results showed that 61.3% of the respondents had good knowledge of the availability of ICT facilities and Radio/TV was the most known at NOUN. About 53% of the respondents had poor access to ICT facilities at NOUN though, 52.1% were engaged in medium level*

utilization of ICT facilities and the most used was Word Processing. The barriers to effective utilization of ICT were inadequate ICT skills, insufficient knowledge of appropriate software, poor infrastructures, and inadequate facilities to support full the application of ICT. The knowledge of ICT had significant influence on the utilization of ICT (r=0.560; p=0.000), accessibility to ICT had significant influence on utilization of ICT (r=0.782; p=0.000) and students' educational levels also had significant influence on the utilization of ICT (χ^2=36.65; p=0.02).Students of NOUN have poor access to ICT facilities, and this significantly influenced the utilization of ICT facilities. The lack of high-level utilization of ICT facilities by students was also due to poor knowledge of ICT. Students' confidence in using ICT facilities should be boosted by improving their knowledge of the opportunities inherent in the use of ICTs and their skills in the use of ICTs should be improved.

Keywords: Accessibility, Barriers, ICT Facilities, Knowledge, Utilization.

Introduction

Information and Communication Technologies (ICTs) have become key tools and have a revolutionary impact on how people see and live in the world. The place of ICTs in education and the world in general cannot be ignored. Modern day businesses are conducted and facilitated using telephones, fax machines and computer communication networks through the internet. This phenomenon has given birth to the contemporary e-commerce, e-government, e-medicine, e-banking, and e-education among others. Adane, Lessa & Shiferaw (2016) summed up that ICT is a revolution that involves the use of computers, internet, and other telecommunication technology in every aspect of human endeavour. They posited that ICT is simply about sharing and having access to data with ease. It is regarded as the superhighway through which information is transmitted and shared by people all over the world. Solomon, Yigzaw and Desalegn (2013) reported that there is a strong and positive associations of students' knowledge of ICT and its utilization. They further concluded that students' knowledge was inadequate, and utilization of ICT was poor.

Therefore, the university should sustain professional development to improve teaching, to raise student performance and equip the college with student centered ICT computer labs to increase students' ICT utilization.

Gadio (2016) perceived ICT as the handling and processing of information (texts, images, graphs, instruction) for use, by means of electronic and communication devices such as computers, cameras, telephone. Mavelas, Wellington & Samuel (2016) also refer to ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. From these views, ICT could therefore be seen as processing and sharing of information using all kinds of electronic device that includes all technologies for the manipulation and communication of information.

Moorthy (2018) observed that, ICTs have revolutionized the way people work today and are now transforming education systems. As a result, if schools train children in yesterday's skills and technologies, they may not be effective and fit into tomorrow's world. This is a sufficient reason for ICTs to win global recognition and attention. For instance, ICTs are dependable tools in facilitating the attainment of one of the Millennium Development Goals (MDGs), which is the achievement of universal primary education by the year 2015. Madu, Vandi & Chagwa (2018), we must ensure that information and communication technologies (ICTs) unlock the door of education systems. This indicates the growing demand and increasingly important place that ICTs could receive in education. Since ICTs provide greater opportunity for students and teachers to adjust learning and teaching to individual needs, society is forcing schools to give an appropriate response to this technical innovation.

The field of education has certainly been affected by the penetrating influence of ICT worldwide and in particular developed countries (Abubakar, 2016). ICT has made a very profound and remarkable impact on the quality and quantity of teaching, learning and research in the educational institutions (Amesi & Yellowe, 2018). Information and communication technology has the potentials to accelerate, enrich, and deepen skill; to motivate and engage students in learning to help relate school experiences to work practices; to help

create economic viability for tomorrow's workers, contribute to radical changes in school; to strengthen teaching and provide opportunities for connection between the school and the world.

Nneka, Pauline, Chioma & Chioma (2018) noted that ICTs are increasingly playing an important role in organizations and in society's ability to produce, access, adopt and apply information. He also viewed ICTs as the tools for the post-industrial age and the foundations for a knowledge economy due to its ability to facilitate the transfer and acquisition of knowledge. Stressing the importance of the use of ICT in education, Galbreath (2017) is of the opinion that through ICT, educational needs have been met; it changes the needs of education as well as the potential processes. The message can be communicated through the email, telex or telephones particularly, the mobile ones. The pervasiveness of ICT has brought about rapid technological, social, political, and economic transformation, which has eventuated in a network society organized around ICT (Madu, *et.al*.,2018).

Okwudili (2015) posited that ICT is an indispensable part of educational administration as its application makes institutions more efficient and productive, thereby engendering a variety of tools to enhance and facilitate teachers' pedagogical activities. For instance, e-learning is becoming one of the most common means of using ICT to provide education to students both on and off campus by means of teaching online offered via web-based systems. Although ICT resources have been looked upon as tools for uplifting the standard of education in any nation, the level of compliance in implementing the ICT resources in the instructional development process leaves much to be desired in Nigerian higher education system.

Recent developments in ICT have drastically affected educational procedure for improved quality of education offered to students. ICT resources in instructional delivery in schools will serve a dual purpose and more efficient classroom instruction (Woreta, Yigzaw & Zegeye, 2013). It is in the pursuance of the need to improve access to tertiary education and provide opportunity for learning while working, that the Federal Government established the National Open University (NOUN) in 2002. The NOUN with a student population of approximately 515,000 and in its effort to take education to the

doorstep of the Nigerian populace has deployed and implemented i-Learn portal technology to enhance students' learning experience. Ngozi, Adaora and Grace (2017} reported in a study conducted on availability and utilization of information communication technology facilities in a private university library in Nigeria that the ICT section of the institution has resources and facilities that are available which the students utilized to certain extent. It also showed the frequency of use by the users. Although there are issues as some ICT facilities are not available, thereby not utilized by the students. Other challenges are inadequate assistance from staff, epileptic power supply and irregular internet connectivity among others. Recommendations were given to include provision of more ICT facilities, regular updates, and trainings on use of ICT, among others. David and Behbod (2017) in the study carried out on effects of ICT on academic achievement of high school students in Neyriz reported that ICT has significant effects on students' academic achievements, and that ICT can be used to predict students' academic components.

This iLearn platform provides online class discussions, networking and collaborations, online access to assignments, Smart e-Book and digitized lecture videos, all of which rely heavily on the students' knowledge, accessibility and utilization of ICT facilities. It is in this light that the assessment of the students' knowledge and utilization of ICT becomes important so that they could be adequately integrated into the new way of learning and the opportunity for 'work and learn' improved. Nneka, Pauline & Chioma, (2018) observed that each technology is likely to play a different role in student learning. Rather than trying to describe the impact of all technologies as if they were the same, researchers need to think about what kind of technologies are being used in the classroom and for what purposes. Two general distinctions could then be observed from the literature. Students can learn from computers where technology is used essentially as tutors and serve to increase student's basic skills and knowledge. Moreover, they can learn with computers where technology is used as a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity, and research skills (Gambari & Okoli, 2017)

Higher education plays a pivotal role in the development of a country, as it is viewed as a powerful means to build knowledge-based society. In Nigeria, higher education imparted by universities is facing challenges in terms of access, equity, and quality (Zubairu, 2015). Use of information and communication technology (ICT) for promoting education and development has always been apart of policy and plan documents on educational expansion. Now, the decision makers at both Federal and state are favouring inclusion of new computer-and internet-based IT/ICT in education (Amesi & Yellowe, 2016), adopting cloud-based virtual classrooms/universities and e-Learning initiatives.

However, the inclusion and adoption of these tools have brought about significant disparity in ICT usage among institutions, particularly between the conventional universities and the NOUN (Mavelas, *et.al*., 2016), which rely heavily on the use of ICT to reach out to its large student population. Even in cases where ICT facilities are available, students' inability to put them to effective use as a result of poor knowledge or restricted access could negatively impact utilization (Moorthy, 2018).

Studies (Gambari & Okoli, 2017; Adane, *et.al*., 2016) have shown that the quality of ICT infrastructure and its use are limited in a large percentage of autonomous/affiliated Universities especially due to lack of trained IT staff, connectivity issues and shortage of funds. ICT provides an avenue to improve education outreach and standards. The deployment of ICT facilities is central to the teaching and research activities of NOUN. Yet, there is sparse information on the knowledge, accessibility, and utilization of ICT among NOUN students. Understanding of the barriers in the utilization of ICT facilities among students are very important key to addressing the identified barriers. Hence, it is as the instance of the foregoing that this study was carried out to assess the knowledge of ICT and its accessibility and utilization among students of National Open University (NOUN) in South West Nigeria.

To this end, the following research questions were answered.

1: What is Students' Level of Knowledge about ICT

2: What is the students' perception about ICT Availability in their school?
3: What is the students' level of accessibility of ICT facilities?
4: What is the extent of students' accessibility to ICT?
5: What is the level of utilisation of ICT among NOUN students?
6: What is the extent of utilisation of ICT among the NOUN students?
7: What are the barriers to effective utilisation of ICT among the students?

Three hypotheses were tested.

$H_0$1: There is no significant relationship between students' knowledge of ICT and their utilization of ICT
$H_0$2: There is no significant relationship between students' accessibility and their utilization of ICT
H_{03}: There is no association between students' course of study and their utilization of ICT

Methodology

Cross-sectional descriptive research design was adopted in this study. The population comprised all students at National Open University in Oyo, Ogun, and Lagos States. The sample is 438 determined through multistage sampling procedure using Taro Yamane's formula for the determination of the sample size.

A simple random sampling technique was used for this study. According to the data obtained from the website of the National Open University (www.noun.edu.ng) in 2019, the Lagos, Oyo and Ogun campuses had approximate (to the nearest thousand) populations of 50,000, 35,000 and 30,000. Proportionate allocation of sample size was used in achieving the numbers of respondents from each campus in each of the three states and this technique gave the following:

Table1:

Schools	Estimate of population	Proportion allocation of sample size	Total sample	Percentage selected from each school
Lagos Campus	50000	$\frac{50}{115}$*438	190	44%
Oyo Campus	35000	$\frac{35}{115}$*438	133	30%
Ogun Campus	30000	$\frac{30}{115}$*438	115	26%
Total	115000		438	100.0

The number of respondents selected from each school was gotten through purposive sampling.
The instrument used for data collection was a self-developed structured questionnaire based on the study objectives. The questionnaire was divided into four sections as follow:

Section A was for assessing students' knowledge about ICTs. The section listed various ICT facilities and asked students to indicate their availability and the knowledge of their use;

Section B was for examining students' accessibility to ICT; The section listed various ICT facilities and asked students to indicate their accessibility to them within the University facilities.

Section C aimed at determining the level of utilization of ICTs. The section listed various ICT facilities and asked students to indicate their utilization of them.

Section D focused on ascertaining the various barriers to the effective utilization of ICT among students. Some of these consisted of multiple choice and the respondents were required to pick the most appropriate option from the available options. Likert scale response such as Strongly Agree (SA), Agree (A), Undecided (UN), Disagree (D) and Strongly Disagree (SD) were also used, with a reliability coefficient of 0.84.

The instrument was administered to the respondent and collected on the spot after being properly filled. Descriptive statistics of percentage scores, frequency counts were used to analyse demographic characteristics of respondents while inferential statistics of Chi-Square and Pearson Product Moment Correlation (r) were used to analyze the hypotheses at 0.05 level of significance.

Results and Discussion

Research question 1: What is Students' Level of Knowledge about ICT?

Table2: Responses on the Students' Level of Knowledge about ICT

Questions	Responses	
ICT facilities for students' use in the schools	**Had knowledge of its availability**	**Had no knowledge of its availability**
Computer hardware	387 (96.5%)	14 (3.5%)
Computer software	362 (90.3%)	39 (9.7%)
Integrated services digital network	175 (43.6%)	226 (56.4%)
Fibre optics connection	89 (22.2%)	312 (77.8%)
Smartboard	56 (14.0%)	345 (86.0%)
Learning management system	47 (11.7%)	354 (88.3%)
Servers/Hubs	305 (76.1%)	96 (23.9%)
Data projector	345 (86.0%)	56 (14.0%)
Digital camera	369 (92.0%)	32 (8.0%)

TV	348 (86.8%)	53 (13.2%)
Internet Browsing	125 (31.2%)	276 (68.8%)
Scanning machines	355 (88.5%)	46 (11.5%)
Telephones	278 (69.3%)	123 (30.7%)
Radio	395 (98.5%)	6 (1.5%)
Video Cassette	59 (14.7%)	342 (85.3%)
Printer	300 (74.8%)	101 (25.2%)
Telephone/Fax	325 (81.0%)	76 (19.0%)
CCTV	12 (3.0%)	389 (97.0%)
Mobile Phones	401 (100%)	0 (0.0%)
Network Computers	198 (49.4%)	203 (50.6%)

The Table 2 presents results on the students' level of knowledge about ICT at NOUN. The results showed that while students had widespread knowledge of the availability of some ICT facilities, they were unaware of some, perhaps, because they were not available. For instance, 96.5% expressed that they were aware of the availability of computer hardware, 90.3% were aware of computer software, 98.5% were aware of radio, 92% were aware of digital camera and all (100%) were aware of mobile phones. However, only 14% were aware of Smart Board, 22.2% were aware of Fibre Optic connections and 3% were aware of Close Circuit Television (CCTV) on campuses.

Research question 2: What is the students' perception about ICT Availability in their school?

Table 3: Summary of Responses on Students' perception of ICT Availability

STUDENTS' KNOWLEDGE ABOUT ICT AT NOUN				**Mean**	**S.D.**	**Min.**	**Max.**
Result Summary	Range Scores	Frequency	Percentage	33.14	4.26	20	40
GOOD KNOWLEDGE	33.15 to 40	246	61.3				
POOR KNOWLEDGE	20 to 33.14	155	38.7				
Total		401	100.0				

The responses in the Table 3 were weighed such that a 'yes' had a weight of '2' while 'no' had a weight of '1'. These weights were applied to compute composite knowledge scores. From the knowledge scores, the mean value was 33.14 and the maximum and minimum scores were 40 and 20 respectively. Furthermore, the knowledge scores were grouped into two levels such that scores from the mean (i.e., from 33.14) and above were grouped as 'good knowledge' while scores below 33.15 were grouped as 'poor knowledge'. The results show that 61.3% of the respondents had good knowledge of the availability of ICT facilities at NOUN.

Research question 3: What is the students' level of accessibility of ICT facilities?

Table 4: Responses on the Students' Accessibility to ICT Facilities

Questions	*Responses*			**Weighte Total (∑)**		
Which of these facilities do you have access to in your study centres?	**3** (f_3)	**2** (f_2)	**1** (f_1)		**WeightedMean**	**Rank**
TV/Radio	335 (83.5%)	57 (14.2%)	9 (2.2%)	1128	2.81	1st
Data projector	178 (44.4%)	208 (51.9%)	15 (3.7%)	965	2.41	2nd
Computer hardware	125 (31.2%)	256 (63.8%)	20 (5.0%)	907	2.26	3rd
Telephones	98 (24.4%)	225 (56.1%)	78 (19.5%)	822	2.05	4th
Computer software	98 (24.4%)	201 (50.1%)	102 (25.4%)	798	1.99	5th
Digital camera	56 (14.0%)	196 (48.9%)	149 (37.2%)	709	1.77	6th
Integrated services digital network	52 (13.0%)	189 (47.1%)	160 (39.9%)	694	1.73	7th
Scanning machines	23 (5.7%)	214 (53.4%)	164 (40.9%)	661	1.65	8th
Internet web training	69 (17.2%)	105 (26.2%)	227 (56.6%)	644	1.61	9.5th
Local Area Network	77 (19.2%)	89 (22.2%)	235 (58.6%)	644	1.61	9.5th
Interactive television	69 (17.2%)	102 (25.4%)	230 (57.4%)	641	1.60	11th
Fibre optics connection	48 (12.0%)	78 (19.5%)	275 (68.6%)	575	1.43	12th
Internet Browsing	29 (7.2%)	79 (19.7%)	293 (73.1%)	538	1.34	13th
Servers/Hubs	29 (7.2%)	75 (18.7%)	297 (74.1%)	534	1.33	14th
Smartboard	17 (4.2%)	96 (23.9%)	288 (71.8%)	531	1.32	15th
Learning management system	12 (3.0%)	97 (24.2%)	292 (72.8%)	522	1.30	16th
Audio conferencing	35 (8.7%)	48 (12.0%)	318 (79.3%)	519	1.29	17th
Teleconferencing	13 (3.2%)	25 (6.2%)	363 (90.5%)	452	1.13	18th

Audio Graphic conferencing	9 (2.2%)	19 (4.7%)	373 (93.0%)	438	1.09	19th
Videoconferencing	8 (2.0%)	16 (4.0%)	377 (94.0%)	433	1.08	20th

3~Accessible; 2~Fairly Accessible; 1~Not Accessible

The results as presented in the Table 4 show the various ICT facilities and the level of students' accessibility to them. It was shown that 83.5% often had access to TV/Radio and it was ranked with a weighted mean of 2.81 as the most accessible (1st) ICT facility to students. This was followed by Data Projector which 51.9% had fair access to and was ranked 2nd with a weighted mean of 2.41. Computer hardware came 3rd with a weighted mean of 2.26 in the list of the most accessible ICT facilities. On the other hand, however, the ICT facilities for Teleconferencing, Audio Graphic Conferencing and Video Conferencing were ranked as the three least accessible to students with weighted means of 1.13, 1.09 and 1.08 respectively (out of a maximum of 3.0 attainable).

Research question 4: What is the extent of students' accessibility to ICT?

Table 5: Summary of Responses on Students' Accessibility to ICT

STUDENTS' ACCESSIBILITY TO ICT AT NOUN				**Mean**	**S.D.**	**Min.**	**Max.**
Result Summary	Range Scores	Frequency	Percentage				
GOOD	49.53–60	69	17.2	43.09	6.44	20	60
FAIR	36.65–49.52	119	29.7				
POOR	20.0–36.64	213	53.1				
Total		401	100.0				

The responses in the Table 5 were weighed such that 'accessible' had a weight of '3', 'fairly accessible' had a weight of '2' while 'not accessible' had a weight of '1'. These weights were applied to compute composite accessibility scores. From the accessibility

scores, the mean value was 33.14 and the maximum and minimum scores were 60 and 20 respectively. Furthermore, the accessibility scores were grouped into three levels such that scores from the mean±S.D. i.e., from 43.09-6.44 (which equals 36.65) to 43.09 + 6.44 (which equals 49.53) were grouped as 'fair access'. Scores above 49.53 were grouped as 'good access' while scores below 36.65 were grouped as 'poor access'. The results show that 53.1% of the respondents had poor access to ICT facilities at NOUN. About 30% had fair access while 17.2% had good access to ICT facilities at NOUN.

Research question 5: What is the level of utilisation of ICT among NOUN students?

Table 6: Responses on the Utilization of ICT among NOUN Students

Questions	*Responses*			Weighted Total (∑)	Weighted Mean	Rank
HowoftendoyouusethefollowingICTgadgetsforacademicrelatedactivities?	**Often** (f_3)	**Rarely** (f_2)	**Never** (f_1)			
Word processing	357 (89.0%)	33 (8.2%)	11 (2.7%)	1148	2.86	1st
Search engines	289 (72.1%)	103 (25.7%)	9 (2.2%)	1082	2.70	2nd
Handheld personal computer	287 (71.6%)	101 (25.2%)	13 (3.2%)	1076	2.68	3rd
Power point package	304 (75.8%)	56 (14.0%)	41 (10.2%)	1065	2.66	4th
Projector	284 (70.8%)	85 (21.2%)	32 (8.0%)	1054	2.63	5th
Subject directory	201 (50.1%)	198 (49.4%)	2 (0.5%)	1001	2.50	6th
Worldwide web (www)	169 (42.1%)	201 (50.1%)	31 (7.7%)	940	2.34	7th
Printer	231 (57.6%)	58 (14.5%)	112 (27.9%)	921	2.30	8th
Spreadsheet package	239 (59.6%)	9 (2.2%)	153 (38.2%)	888	2.21	9th
e-learning	109 (27.2%)	250 (62.3%)	42 (10.5%)	869	2.18	10th

Online databases	105 (26.2%)	232 (57.9%)	64 (16.0%)	843	2.10	11th
Fax machine	52 (13.0%)	301 (75.1%)	48 (12.0%)	806	2.01	12th
Periodic training organized for students on the use of ICTs	100 (24.9%)	189 (47.1%)	112 (27.9%)	790	1.97	13th
Graphic designs	56 (14.0%)	109 (27.2%)	236 (58.9%)	622	1.55	14th
Invisible websites	42 (10.5%)	119 (29.7%)	240 (59.9%)	604	1.51	15. 5th
Digitized lecture videos	63 (15.7%)	79 (19.7%)	259 (64.6%)	606	1.51	15. 5th
Social network media services	52 (13.0%)	89 (22.2%)	260 (64.8%)	594	1.48	17th
Virtual library gateways	9 (2.2%)	52 (13.0%)	340 (84.8%)	471	1.17	18th
e-meeting with fellow students on school assignments (online class discussions)	7 (1.7%)	18 (4.5%)	376 (93.8%)	433	1.08	19th

The results as presented in the Table 6 show the results on the utilization of ICT among NOUN students. It was shown that 89% of the students often used word processing and this came 1st with a weighted mean of 2.86. About 72.1% often used search engines and this came 2nd with a weighted mean of 2.70. This was followed by the utilization of handheld personal computer which was often used by 71.6% and came 3rd with a weighted mean of 2.68. Also, 70.8% often used projector but 62.3% rarely used online databases. On the other hand, however, the two least utilized ICT facilities by the students were virtual library gateways and e-meeting with fellow students on school assignments (online class discussions) often used by 2.2% and 1.7% respectively with weighted means of 1.17 and 1.08 respectively.

Research question 6: What is the extent of utilisation of ICT among the NOUN students?

Table 7: Extent of Utilization of ICT among Students of NOUN

LEVEL OF UTILIZATION OF ICT AMONG STUDENTS OF NOUN				**Mean**	**S.D.**	**Min.**	**Max.**
Result Summary	Range Scores	Frequency	Percentage				
HIGH	48.68–57.0	120	29.9	41.65	7.02	19	57
MEDIUM	34.63–48.67	209	52.1				
LOW	19.0–34.62	72	18.0				
Total	19.0–57.0	401	100.0				

The responses in the Table 7 were weighed such that a 'often' had a weight of '3', 'rarely' had a weight of '2' while 'never' had a weight of '1'. These weights were applied to compute composite utilization scores. From the utilization scores, the mean value was 41.65 and the maximum and minimum scores were 57 and 19 respectively. Furthermore, the utilization scores were grouped into three levels such that scores from the mean±S.D. i.e., from 41.65-7.02 (which equals 34.63) to 41.65+7.02 (which equals 48.67) were grouped as 'medium utilization'. Scores above 48.67 were grouped as 'high utilization' while scores below 34.63 were grouped as 'low utilization'. The results indicated that 52.1% of the respondents' utilized ICT on a medium level. About 30% were involved in high level utilization of ICT but 18% were involved in low level utilization of ICT.

Research question 7: What are the barriers to effective utilisation of ICT among the students?

Table 8: Responses on the Barriers to Effective Utilization of ICT among Students

Questions	*Responses*		
Which of the following factors are barriers imitating against your use of ICT in your academic activities?	**Agreed**	**Undecided**	**Disagreed**
Students' inadequate ICT skills	252 (62.8%)	98 (24.4%)	51 (12.7%)
Lack of confidence in using ICTs	15 (3.7%)	75 (18.7%)	311 (77.6%)
Lack of knowledge of how to evaluate the use and role played by ICT in teaching and learning	53 (13.2%)	78 (19.5%)	270 (67.3%)
Insufficient knowledge of appropriate software	258 (64.3%)	95 (23.7%)	48 (12.0%)
Poor infrastructures	387 (96.5%)	11 (2.7%)	3 (0.7%)
Insufficient time to make use of the computer	293 (73.1%)	86 (21.4%)	22 (5.5%)
Irregular power supply	352 (87.8%)	42 (10.5%)	7 (1.7%)
Inadequate facilities to fully support the application of ICT	308 (76.8%)	76 (19.0%)	17 (4.2%)
Non-inclusion of ICT programmes in students' training curriculum	109 (27.2%)	209 (52.1%)	83 (20.7%)
Lack of fund to buy access	247 (61.6%)	86 (21.4%)	68 (17.0%)
Cost of purchasing computers	66 (16.5%)	79 (19.7%)	256 (63.8%)
Complexity in using ICTs	52 (13.0%)	106 (26.4%)	243 (60.6%)
ICT services are not available	112 (27.9%)	129 (32.2%)	160 (39.9%)
High cost of personal ICT tools	269 (67.1%)	88 (21.9%)	44 (11.0%)
Lack of time to experiment ICT	78	106	217

	(19.5%)	(26.4%)	(54.1%)
Lack of knowledge of opportunities that ICT provides	265 (66.1%)	103 (25.7%)	33 (8.2%)
Limited technology infrastructure	324 (80.8%)	66 (16.5%)	11 (2.7%)
Lack of maintenance culture	305 (76.1%)	77 (19.2%)	19 (4.7%)
Lack of qualified ICT personnel	130 (32.4%)	112 (27.9%)	159 (39.7%)
Internet fraud	209 (52.1%)	115 (28.7%)	77 (19.2%)

The results as presented in the Table 8 show that 62.8% agreed that inadequate ICT skills by students were barriers militating against effective utilization of ICT. Also, 64.3% expressed that insufficient knowledge of appropriate software was one of the barriers against effective utilization of ICT amongst students. Furthermore, 96.5% identified poor infrastructures and 73.1% pointed out that insufficient time to make use of the computer was a barrier against effective utilization. The other barriers against effective utilization of ICT facilities amongst students were reported as inadequate facilities to support full the application of ICT (76.8%), lack of knowledge of opportunities that ICT provides (66.1%), limited technology infrastructure (80.8%), lack of maintenance culture (76.1%) and high cost of personal ICT tools (67.1%).

Hypotheses

H_{01}: There is no significant relationship between students' knowledge of ICT and the utilization of ICT

Table 9: Pearson Product Moment correlation showing the relationship between students' knowledge of ICT and their utilization of ICT

Correlations	Mean	Standard Deviation	N	R	P	Decision
Knowledge of ICT	33.14	4.26	401	**0.560**	0.000	***Significant***
Utilization of ICT	41.65	7.02				

The results as presented in the Table 9 show the relationship between students' knowledge of ICT and their utilization of ICT, using Pearson correlations. It was shown that the relationship between the variables had a correlation coefficient (r) of 0.56 at p=0.000. This is a positive coefficient, and it indicates that as students' knowledge of ICT increased, their utilization of ICT also increased. Conversely also, low knowledge level of ICT implied low level of utilization of ICT amongst students. This relationship was significant (r=0.560; p=0.000). Since this p-value is less than the 0.05 significant level, the null hypothesis (H_0: There is no significant relationship between students' knowledge of ICT and their utilization of ICT) was rejected. Therefore, it was concluded that there is significant relationship between students' knowledge of ICT and their utilization of ICT. This is in line with the findings of Solomon, Yigzaw and Desalegn (2013) who reported that there is a strong and positive associations of students' knowledge of ICT and its utilization.

H_{02}: There is no significant relationship between students' accessibility and their utilization of ICT

Table10: Pearson Product Moment correlation showing the relationship between students' course of study and their utilization of ICT

Correlations	Mean	Standard Deviation	N	R	P	Decision
Accessibility to ICT	43.09	6.44	401	**0.782**	0.000	***Significant***
Utilization of ICT	41.65	7.02				

The results as presented in Table 10 show the relationship between students' accessibility and their utilization of ICT, using Pearson correlations. It was shown that the relationship between the variables had a correlation coefficient (r) of 0.782 at p=0.000. This is a strong positive coefficient, and it indicates that as students' access to ICT increased, their utilization of ICT also increased. Conversely also, a fall in students' access to ICT led to a reduction in the level of utilization of ICT amongst students. This relationship was significant (r=0.782; p=0.000). Since this p-value is less than the 0.05 significant

level, the null hypothesis (H_0: There is no significant relationship between students' accessibility and their utilization of ICT) was rejected. Therefore, it was concluded that there is significant relationship between students' accessibility and their utilization of ICT. This supported the findings of Ngozi, Adaora and Grace (2017) who reported in a study conducted on availability and utilization of information communication technology facilities in a private university library in Nigeria that the ICT section of the institution has resources and facilities that are available which the students utilized to certain extent. It also showed the frequency of use by the users.

H_{03}: There is no significant association between students' course of study and their utilization of ICT

Table 11: Cross tabulation of Level of Utilization of ICT by Courses of Study by Students

		Level of Utilization of ICT				X^2	***p***	Remark
		High	Medium	Low	Total			
Departments	Sciences	45 (33.6%)	74 (55.2%)	15 (11.2%)	134 (100%)	6.65	***0.20***	***Not significant***
	Social Sciences	25 (28.4%)	40 (45.5%)	23 (26.1%)	88 (100%)			
	Management Sciences	32 (28.8%)	69 (62.2%)	10 (9.0%)	111 (100%)			
	Arts/ Humanities	18 (26.5%)	26 (38.2%)	24 (35.3%)	68 (100%)			
	Total	120 (29.9%)	209 (52.1%)	72 (18.0%)	401 (100%)			

The results as presented in the Table 11 show the association between students' level of utilization of ICT and their courses of study. The chi-square value of the test of the relationship was 6.65 at p=0.20. This p-value was not less than the 0.05 significant level. Hence, the null hypothesis (H_0: There is no significant association between students' course of study and their utilization of ICT) was rejected. This is in line with the findings of David and Behbod (2017) in the study carried out on effects of ICT on academic achievement of high school students in Neyriz that ICT has significant effects on students'

academic achievements, and that ICT can be used to predict students' academic components.

Recommendations

Based on the results of this study and as ways of improving students' accessibility and utilization of ICT in NOUN, the study makes the following recommendations:

- Students' confidence in using ICT facilities should be boosted by improving their knowledge of the opportunities inherent in the use of ICTs
- Students' skills in the use of ICTs should be improved, through in-house training and employing qualified ICT educators
- Adequate provision should be made by government and school authorities for facilities to support fully the application of ICT
- There should be inclusion of ICT programmes in students' training curriculum from primary to tertiary institution by government
- All bottlenecks in the way of students' accessibility to ICT facilities should be reviewed and removed by school authorities and policy makers.

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ICT FACTORS AND LECTURERS' PRODUCTIVITY IN PUBLIC COLLEGES OF EDUCATION IN THE NEW NORMAL

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Abstract
The outbreak of COVID-19 pandemic introduced a new normal into the business world and the higher education environment. The pandemic has served as an existential threat to humanity resulting in productive dynamism in higher education system particularly in the demand for enhanced productivity of lecturers through Information Communications Technology (ICT) factors (availability, accessibility and functionality of ICT facilities). This study investigated ICT factors and the productivity of lecturers in public Colleges of Education in Nigeria in the new normal. The study was guided by one research question and one hypothesis. The survey research design was adopted for the study. The population for the study comprised of lecturers and students in Colleges of Education in the Southwestern geopolitical zone of Nigeria. The multi-stage procedure was adopted to draw a sample of 1,011Lecturers and 3,033 students. The findings of the study included the fact that ICT facilities are available, accessible and functional in public Colleges of Education in Southwestern Nigeria as they scored low ($\bar{x}$ = 0.00-2.44)*. Also, it was found from the hypothesis in this study that a significant relationship exists between ICT facilities factors (availability, accessibility, functionality) and lecturers' productivity (teaching) in public Colleges of Education in Southwestern Nigeria at r=0.125; 0.868 and 0.824; p<0.05 level of significance. The study recommended that Government should make sure that acquisition of computers and other related ICT facilities are available, adequately accessible for*

lecturers and functioning properly. Additionally, training of lecturers to enhance ICT proficiency must be encouraged by the government.

Keywords: *ICT factors, lecturers' productivity, new-normal, Nigeria.*

Introduction

The outbreak of COVID-19 pandemic introduced a new normal in the world, as well as to higher education environment. The pandemic has served as an existential threat to humanity and to higher education in particular demanding for enhanced productivity among lecturers. Productivity of lecturers in Colleges of Education in Nigeria can be quantified in terms of research output, teaching output and community services. Research output involves (publications in local and international journals, attendance at local and international conferences, international seminars and workshops). Teaching output involves dissemination of knowledge to students, final year students' projects supervision and teaching practice supervision. Others in this category involves class (level) coordination, exanimation results preparation and in some other cases, rigorous administrative duties. Another index of lecturer's productivity is community services which is used in measuring the levels of output of lecturers. It is not a new fact that scholars have explained that the productivity of academic endeavors are measured differently from the approach adopted in the productive process. In the academic environment, measurement of productivity cannot be seen like in the industrial factories where productivity is made of tangible products (Akangbou, 1985 cited in Isah, 2012).

The quality of teaching carried out in College of Education has been adjudged to be of low standard when compared with counterparts in other parts of the world (Mohammed, 2017). Also, stakeholders have complained about the type of teachers produced in Nigerian Colleges of Education generating contentions on how the Colleges of Education graduates were produced which indirectly questions what lecturers do in Colleges of Education. The complaint is not about a section of CoEs, but all over, calling to question the level of productivity of lecturers in terms of teaching. These stakeholders' contentions have been exacerbated in recent times by the outbreak of

COVID-19 pandemic which has introduced a new dimension into the higher education environment. These contentions and counter arguments have inspired this investigation into the lecturers' productivity and ICT factors in public Colleges of Education in Southwestern, Nigeria.

The main purpose of this study is to investigate the extent of availability, accessibility and functionality of ICT facilities on lecturers' productivity(teaching) in Colleges of Education in southwestern, Nigeria.

Statement of the Problem

The world has been inundated by a series of new changes arising from local and global dynamisms which has also affected higher education that includes Colleges of Education. In Nigeria, Colleges of Education serve as a major producer of teachers for the lower schools i.e. basic schools. Dynamisms currently facing the professions includes threats to education in the form of terrorism and in recent times the COVID-19 pandemic. The arrival of COVID-19 generated pedagogical changes but in the Colleges of Education before now, stakeholders have complained of the productivity of their output (graduates). The challenges of Colleges of Education graduates have created the opportunities to also query the competence of the producers of these graduates who are the lecturers in the Colleges of Education. The first area that is usually questioned is the level of productivity of these lecturers. Productivity is seen as asking questions on the competence in the areas of teaching, research and community services. While some say that the level of productivity of these lecturers is low, others argue that it is not low. To address the issue of teaching, modern teaching technologies canvassed for Colleges of Education in the form of Information and Communications Technology (ICT) and its factors will be investigated as ICT availability, accessibility and functionality among Colleges of Education lecturers in southwestern, Nigeria. Before now, researchers had investigated much into the academic performance of Colleges of Education students and graduates. Though the same challenges were identified, attention was not focused on the productivity of lecturers rather, research focus was on lecturers' welfare, qualifications among others.

Research Question:
What is the extent to which ICT facilities are available, accessible and functional in public Colleges of Education in southwestern Nigeria?

Hypothesis:
There is no significant relationship between ICT facilities factors (availability, accessibility and functionality) and lecturers' productivity (teaching) in public Colleges of Education in southwestern Nigeria.

Methodology
This study adopted the survey research design with a study population that comprised of lecturers and students from 16 (Sixteen) accredited Colleges of Education in southwestern Nigeria. The sample size for the study consisted of 1,011 lecturers and 3,033 students. The study sample consisted of respondents from six public Colleges of Education using the Multi-stage sampling procedure. Research instrument was the ICT factors and Lecturers' Productivity Questionnaire (ICTFLPQ) that was subjected to face and content validity. A trial test was conducted using ICTFLPQ on respondents outside the target group of the research through the Cronbach's alpha statistical tool that yielded a coefficient of 'r'=0.86. Data collected from the field were analyzed using descriptive statistics as frequency count, mean percentages, standard deviation, graphs charts for research questions and inferential statistics for the hypothesis. The Pearson Product Moment Correlation Coefficient was used to analyze the hypothesis at $p < 0.05$ level of significance.

Finding and Results

Research Question1: What is the extent to which ICT facilities are available, accessible and functional in public Colleges of Education in Southwestern Nigeria?

Table 1: Extent to Which ICT Facilities are Available in Public Colleges of Education in Southwestern Nigeria

Items	Highly Available	Moderately Available	Scarcely Available	Not Available	Mean ($\bar{x}$)	Std. D
Desktop / Laptop computers with internet for every Lecturer	101 (10.0)	341 (33.7)	319 (31.6)	250 (24.7)	2.29	0.95
Interactive whiteboard/smart board	78 (7.7)	377 (37.3)	388 (33.4)	218 (21.6)	2.31	0.90
Commercially produced educational software	70 (6.9)	323 (31.9)	404 (40.0)	214 (21.2)	2.25	0.87
Institution Virtual Library (Digital Library)	99 (9.8)	420 (41.5)	336 (33.2)	156 (15.4)	2.46	0.87
Examination Scoring Machine (OMR)	119 (11.8)	345 (34.1)	349 (34.5)	198 (19.6)	2.38	0.93
Internally produced educational software	71 (7.0)	380 (37.6)	392 (38.8)	168 (16.6)	2.35	0.84
Multimedia projectors	101 (10.0)	418 (41.3)	388 (38.4)	104 (10.3)	2.51	0.81
Computer Aided Instruction Software	55 (5.4)	431 (42.6)	383 (37.9)	142 (14.0)	2.40	0.79
Online databases for lesson preparation.	50 (4.9)	367 (36.3)	376 (37.2)	218 (21.6)	2.25	0.85
Smart phones for teaching and research	42 (4.2)	402 (39.8)	294 (29.1)	273 (27.0)	2.21	0.89
Tablets phones for teaching and research	45 (4.5)	331 (32.7)	337 (33.3)	298 (29.5)	2.12	0.89
E -mail address for lecturers to access research-based portal e.g. Google Scholar, Research Gate, Orchid	91 (9.0)	351 (34.7)	358 (35.4)	211 (20.9)	2.32	0.90
Learning Management System (LMS) e.g., Zoom, I-Lab, Edmodo	33 (3.3)	376 (37.2)	351 (34.7)	251 (24.8)	2.19	0.85
Lecturers E-portal for downloading of registered students and uploading of students' scores.	92 (9.1)	366 (36.2)	323 (31.9)	230 (22.7)	2.32	0.92
Weighted Average					**2.31**	

N = 1011

Key: 4 = Strongly Agree, **3** = Agree, **2** = Disagree, **1** = Strongly Disagree

Decision Rule: Low = 0.00-2.44, **Moderate**=2.45-3.44 and **High** = 3.45-4.00

Mean values of all the items in Table 1 were added and divided by the number of items in the table. Applying the decision rule, the value of the weighted average (2.31 out of 4.00 maximum obtainable) falls with the decision value for ***Low Extent,*** therefore it can be concluded that the extent to which ICT facilities are available in public Colleges of Education in Southwestern Nigeria is low.

Table (2): Levels of Accessibility of ICT Facilities in Public Colleges of Education in southwestern Nigeria.

Items	Highly Accessible	Accessible	Fairly Accessible	Not Accessible	Mean ($\bar{x}$)	Std. D
Desktop / Laptop computers with internet for every Lecturer	74 (7.3)	239 (23.6)	439 (43.4)	259 (25.6)	2.13	0.88
Interactive whiteboard/smart board	54 (5.3)	334 (33.0)	382 (37.8)	241 (23.8)	2.20	0.86
Commercially produced educational software	108 (10.7)	300 (29.7)	416 (41.1)	187 (18.5)	2.33	0.90
Institution Virtual Library (Digital Library)	111 (11.0)	355 (35.1)	344 (34.0)	201 (19.9)	2.37	0.92
Examination Scoring Machine (OMR)	85 (8.5)	274 (27.1)	431 (42.6)	221 (21.9)	2.22	0.88
Internally produced educational software	82 (8.1)	339 (33.5)	365 (36.1)	225 (22.3)	2.28	0.90
Multimedia projectors	80 (7.9)	414 (40.9)	332 (32.8)	185 (18.3)	2.39	0.87
Computer Aided Instruction Software	101 (10.0)	344 (34.0)	417 (41.2)	149 (14.7)	2.39	0.86
Online databases for lesson preparation.	87 (8.6)	307 (30.4)	344 (34.0)	273 (27.0)	2.21	0.94

Smart phones for teaching and research	58 (5.7)	320 (31.7)	373 (36.9)	260 (25.7)	2.17	0.88
Tablets phones for teaching and research	82 (8.1)	299 (29.6)	379 (37.5)	251 (24.8)	2.21	0.91
E -mail address for lecturers to access research-based portal e.g. Google Scholar, Research Gate, Orcid	61 (6.0)	310 (30.7)	378 (37.4)	263 (25.9)	2.17	0.88
Learning Management System (LMS) e.g., Zoom, I- Lab, Edmodo	91 (9.0)	281 (27.8)	333 (32.9)	306 (30.3)	2.16	0.96
Lecturers E-portal for downloading of registered students and uploading of students' scores.	79 (7.8)	279 (27.6)	379 (37.5)	274 (27.1)	2.16	0.91
Weighted Average					**2.24**	

Table 2 shows the extent to which ICT facilities are accessible in public Colleges of Education in Southwestern Nigeria. The table reveals that the lecturers indicated all the ICT facilities to be *fairly accessible* only: desktop/laptop computers with internet for every lecturer ($\bar{x}$ = 2.13, SD = 0.88), interactive whiteboard/smart board ($\bar{x}$ = 2.20, SD = 0.86), commercially produced educational software ($\bar{x}$ = 2.33, SD = 0.90), institution Virtual Library (Digital Library) ($\bar{x}$ = 2.37, SD = 0.92), examination Scoring Machine (OMR) ($\bar{x}$ = 2.22, SD = 0.88), internally produced educational software ($\bar{x}$ = 2.28, SD = 0.90), multimedia projectors ($\bar{x}$ = 2.39, SD = 0.87), Computer Aided Instruction Software ($\bar{x}$ = 2.39, SD = 0.86), online databases for lesson preparation. ($\bar{x}$ = 2.21, SD = 0.94), smart phones for teaching and research ($\bar{x}$ = 2.17, SD = 0.88), tablets phones for teaching and research ($\bar{x}$ = 2.21, SD = 0.91), E -mail address for lecturers to access research-based portal e.g. Google Scholar, Research Gate, Orchid ($\bar{x}$ = 2.17, SD = 0.88), Learning Management System (LMS) e.g., Zoom, I- Lab, Edmodo ($\bar{x}$ = 2.16, SD = 0.96), Lecturers E-portal for

downloading of registered students and uploading of students' scores ($\bar{x}$ = 2.16, SD = 0.91). Applying the same decision rule in table 4.7a, the value of the weighted average (2.24 out of 4.00 maximum obtainable) falls with the decision value for ***Low Extent,*** therefore it can be concluded that the extent to which ICT facilities are accessible in public Colleges of Education in Southwestern Nigeria is low.

Table 3: Level of Functionality of ICT Facilities in Public Colleges of Education, southwestern Nigeria.

Items	Adequately Functioning	Moderately Functioning	Fairly Functioning	Not Functioning	Mean ($\bar{x}$)	Std. D
Desktop / Laptop computers with internet for every Lecturer	94 (9.3)	341 (33.7)	305 (30.2)	271 (26.8)	2.26	0.96
Interactive whiteboard/smart board	65 (6.4)	371 (36.7)	348 (34.4)	227 (22.5)	2.27	0.89
Commercially produced educational software	68 (6.7)	346 (34.2)	337 (33.3)	260 (25.7)	2.22	0.91
Institution Virtual Library (Digital Library)	107 (10.6)	406 (40.2)	293 (29.0)	205 (20.3)	2.41	0.93
Examination Scoring Machine (OMR)	104 (10.3)	329 (32.5)	325 (32.1)	253 (25.0)	2.28	0.95
Internally produced educational software	87 (8.6)	341 (33.7)	333 (32.9)	250 (24.7)	2.26	0.93
Multimedia projectors	88 (8.7)	386 (38.2)	356 (35.2)	181 (17.9)	2.38	0.88
Computer Aided Instruction Software	72 (7.1)	409 (40.5)	312 (30.9)	218 (21.6)	2.33	0.89
Online databases for lesson preparation.	31 (3.1)	310 (30.7)	372 (36.8)	298 (29.5)	2.07	0.85
Smart phones for teaching and research	37 (3.7)	349 (34.5)	352 (34.8)	273 (27.0)	2.15	0.86

Tablets phones for teaching and research	66 (6.5)	301 (29.8)	381 (37.7)	263 (26.0)	2.17	0.89
E -mail address for lecturers to access research-based portal e.g. Google Scholar, Research Gate, Orcid	87 (8.6)	313 (31.0)	390 (38.6)	221 (21.9)	2.26	0.90
Learning Management System (LMS) e.g., Zoom, I-Lab, Edmodo	39 (3.9)	346 (34.2)	353 (34.9)	273 (27.0)	2.15	0.86
Lecturers E-portal for downloading of registered students and uploading of students' scores.	113 (11.2)	334 (33.0)	391 (38.7)	173 (17.1)	2.38	0.90
Weighted Average					**2.26**	

Table (3) shows the extent to which ICT facilities are functioning in public Colleges of Education in Southwestern Nigeria. The table reveals that the lecturers indicated all the ICT facilities to be *fairly functioning* only: desktop/laptop computers with internet for every lecturer ($\bar{x}$ = 2.26, SD = 0.96), interactive whiteboard/smart board ($\bar{x}$ = 2.27, SD = 0.89), commercially produced educational software ($\bar{x}$ = 2.22, SD = 0.91), institution Virtual Library (Digital Library) ($\bar{x}$ = 2.41, SD = 0.93), examination Scoring Machine (OMR) ($\bar{x}$ = 2.28, SD = 0.95), internally produced educational software ($\bar{x}$ = 2.26, SD = 0.93), multimedia projectors ($\bar{x}$ = 2.38, SD = 0.88), Computer Aided Instruction Software ($\bar{x}$ = 2.33, SD = 0.89), online databases for lesson preparation. ($\bar{x}$ = 2.07, SD = 0.85), smart phones for teaching and research ($\bar{x}$ = 2.15, SD = 0.86), tablets phones for teaching and research ($\bar{x}$ = 2.17, SD = 0.89), E -mail address for lecturers to access research-based portal e.g. Google Scholar, Research Gate, Orchid ($\bar{x}$ = 2.26, SD = 0.90), Learning Management System (LMS) e.g., Zoom, I- Lab, Edmodo ($\bar{x}$ = 2.15, SD = 0.86), lecturers E-portal for

downloading of registered students and uploading of students' scores ($\bar{x}$ = 2.38, SD = 0.90).

Applying the same decision rule, the value of the weighted average (2.26 out of 4.00 maximum obtainable) falls with the decision value for ***Low Extent,*** therefore it can be concluded that the extent to which ICT facilities are functioning in public Colleges of Education in Southwestern Nigeria is low.

Hypothesis

There is no significant relationship between ICT facilities factors (availability, accessibility, functionality) and lecturers' productivity (teaching) in public Colleges of Education in southwestern Nigeria.

Table 4: Correlation Matrix of Relationship among ICT Facilities Availability, Accessibility, Functionality and Lecturers' Teaching Productivity in Colleges of Education in southwestern Nigeria

S/N	Variable	1	2	3	4
1	Teaching Productivity	1			
2	ICT Facilities Availability	-0.125 0.000	1		
3	ICT Facilities Accessibility	-0.148 0.000	0.868** 0.000	1	
4	ICT Facilities Functionality	-0.119 0.000	0.824** 0.000	0.887** 0.000	1
N		1011	1011	1011	1011
Mean		40.09	32.34	31.37	31.59
STD.D		6.05	8.28	9.08	9.38

** Significant at 0.05 level

Table 4 shows the relationship that exists between ICT facilities factors (availability, accessibility, functionality) and lecturers' teaching productivity. The table shows that a significant negative and weak relationship exists between ICT facilities availability and lecturers' teaching productivity ($N = 1011$; $r = -.125$; $p<0.05$), ICT facilities accessibility and lecturers' teaching productivity ($N = 1011$; $r = -.148$; $p<0.05$) and between ICT facilities functionality and lecturers' teaching productivity ($N = 1011$; $r = -.119$; $p<0.05$). Moreover, the table shows that there was strong positive and significant relationship among the independent variables: ICT facilities availability and ICT facilities accessibility ($N = 1011$; $r = .868$; $p<0.05$), ICT facilities availability and ICT facilities functionality ($N = 1011$; $r = .824$; $p<0.05$), ICT facilities accessibility and ICT facilities functionality ($N = 1011$; $r = .887$; $p<0.05$). Based on this result, it can be inferred that there is significant relationship between ICT facilities factors (availability, accessibility, functionality) and lecturers' productivity (teaching) in public Colleges of Education in Southwestern Nigeria. Hence, the hypothesis was rejected.

Discussion of findings

The findings of the research question relating to the extent to which ICT facilities are available, accessible and functioning in public Colleges of Education in Southwestern Nigeria are low. The findings in this study is in line with the report of Dorayi (2012) who investigated the level of availability and use of ICT in Colleges of Education libraries in Kano state, Nigeria. The results of the survey on Colleges of Education staff on the level of availability, use of and perception of the impact of ICT on teacher education in Nigeria revealed and suggested a low level of usage of ICT gadgets; non-availability of ICT equipment and that the respondents were disgruntled with the sluggish use and integration of ICT. Furthermore, The finding is in consonance with the findings of Mishra and Koehler (2006); Adejumo (2000) and Adeogun (2002) which vividly show that few ICT facilities available, lack proper accessibility because they are kept in ICT laboratory, non-accessibility ICT facilities and lack of proper functioning of ICT facilities in College of Education make teaching meaningless. Also, it was found from the hypothesis in this study that there is significant relationship between ICT facilities factors (availability, accessibility, functionality) and lecturers' productivity (teaching) in public Colleges of Education in Southwestern Nigeria. The findings in this study corroborate with the finding of Obakhume (2011) who found that availability and usability of Information and communication technology among secondary school teachers in Oyo Metropolis contributed significantly to the teachers' productivity. In addition, the current finding is the same with Tella (2011) that ICT factors; availability, utilization of information and communication technology support significantly predicted lecturers' productivity.

Conclusion and Recommendations

From this study, the standard of lecturers' productivity (teaching and research) in Colleges of Education will improve significantly if ICT facilities are available, accessible and functioning. Therefore, Government should make sure that acquisition of computers and other related ICT facilities are available, adequately accessible for lecturers and functioning properly. This can be in form of making the ICT facilities available in locations where they can easily have made use

of them without any difficulties. This ease of access may end up increasing the frequency of use of the facilities. Additionally, training of lecturers to enhance ICT proficiency must be encouraged by the government. Furthermore, there is urgent need for the government to design and develop ICT literacy and ICT capacity building programme for lecturers to sharpen skills and boost ICT proficiency that are best developed whilst ICT remains transparent in the background of subject learning**.**

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EMERGING TECHNOLOGIES AS PREDICTORS OF LECTURERS' JOB PERFORMANCE IN MEETING THE DEMANDS OF THE NEW NORMAL IN RIVERS STATE UNIVERSITIES

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Abstract
The study examined the predictive power of emerging technologies' usage on lecturers' job performance in meeting the demands of the new normal in Rivers State universities. Three research questions and three hypotheses guided the study. The correlation research design was used. The population for the study was the 2732 lecturers in the 3 public universities in Rivers State. A sample of 821 lecturers which represented 30% of the population drawn using proportionate stratified random sampling technique was used for the study. Two structured questionnaires titled: Emerging Technologies' Usage Scale (ETUS) and Lecturers' Job Performance Scale (LJPS) were used for the study. The instruments were validated by 3 experts. The ETUS had a reliability coefficient of 0.85, while the LJPS had 0.76 derived using the Cronbach alpha method. Simple regression was used to answer the research questions while t-test associated with simple regression was used to test the hypotheses. Findings revealed that usage of virtual reality predict lecturers' job performance by 18%, usage of computational thinking predict lecturers' job performance by 7% while usage of video conferencing predict lecturers' job performance by 19%. It was therefore recommended amongst others that lecturers should update their digital skills in line with emerging trends in education which requires technological knowledge and skills to meet the needs of the new normal.

Keywords: Emerging Technologies, Lecturers' Job Performance, Computational Thinking

Introduction

The goal of higher education in any nation is to produce competent, self-reliant and resourceful graduate that will contribute greatly to the growth and development of the nation. Since the establishment of the first university in Nigeria, the realization of this goal has been achieved through traditional teaching and learning methods. Ali (2020) submitted that the conventional/traditional educational system required the face-to-face approached to teaching and learning. However, with the advent of the COVID-19 pandemic, there was a need for a paradigm shift from the traditional face-face method of teaching to new mode of learning that will accommodate the restrictions posed by the pandemic. This led many educational institutions to use different digital and online strategies to promote learning which has become the new normal in education.

The new normal in education involves promoting individualized learning. According to Fincher (2021), the new normal in a learning environment entails social distancing instead of social interactions, blended learning, the use virtual tools instead of face-to-face interactions and promotion of digital assessments. Similarly, Dorn et al. (2020) observed that methods like blended learning-combining face-face and online instruction, flipped classroom; use of pre-recorded lecture videos, video-conferencing, use of learning management systems like Google Classroom and Edmodo have become the new normal in fostering learning. The extent to which this new normal in higher education is able to improve quality learning depends largely on lecturers' job performance.

Job performance is seen as the ability of a worker to carry out a task effectively and efficiently. Wesley (2015) conceptualized job performance as a worker's output in achieving institutional objectives. It involves actualizing or achieving a sated statutory duty. Lecturers' job performance therefore, refers to the extent to which lecturers complete their teaching and research tasks intended to produce competent and resourceful graduate that will contribute greatly to the development of a country. According to Edeh et al. (2020), lecturers' job performance refers to their behaviour and approach towards the achievement of laid down educational goals. Lecturers are said to have performed well in their jobs when the stated objectives for the teaching and learning process is achieved. There is no doubt that

lecturers' job performance plays a critical role in meeting the demands of the new normal. Hence, lecturers' usage of emerging technologies is an important variable to consider in predicting the performance of lecturers in meeting the demands of the new normal.

Emerging Technologies (ETs) are those technologies which are on the rise that is likely to have a great impact and produce a radical change in the way things are done in a particular field. As submitted by Grimus (2020), emerging technologies refers to tools, innovations, methods, resources, artefacts, concepts, connected with digitalization, that have a potential to transform the processes and results regardless of whether these are new or old technologies. In education, ETs is changing all aspect of the educational processes. It has brought about changes in classroom designs, quality of teaching content, teaching techniques and manner of students' engagement. The aim of all emerging technologies in education is to transform and reshape the learning process for students. It introduces flexibility to the teaching and learning process and takes teaching and learning beyond the physical classrooms (Wark and Ally, 2020). These technologies help to better enhance students' work and provides educators with the opportunities to improve their skills and job performances.

Globally, emerging technologies has brought remarkable innovative changes to education and many educators are now moving towards technology-based teaching and learning. ETs such as Artificial Intelligence (AI) have made the classroom experience to be more practical, stimulating and engaging. Cloud and tablet computing, mobile learning and augmented reality are relevant emerging technologies that are getting popular in the field of education. Another concept that is becoming more popular is the integration of automation in the educational process. With automation, lectures can be digitally scheduled and students can get a better chance of receiving lectures automatically at specific times. Learning analytics is another emerging technology that educators now use to record students learning patterns and behaviour. In recent times games have become not just tools for recreation but for scaffolding concepts in the learning process and simulating real world experiences. There are many emerging technologies in education; however this study looked at virtual reality,

computational thinking and video conferencing. Despite the fact that there are many studies on these emerging technologies, there is a relatively sparse literature on the effects of these emerging technologies usage on lecturers' job performance in meeting the demands of the new normal in higher education in Nigeria, hence the need for this study.

Virtual Reality and Lecturers' Job Performance

Virtual Reality (VR) is a three-dimensional computer generated simulation of real world experiences. VR allows people to interact with an artificial environment through electronic devices that send and receive information like motion sensors (Varnum, 2019). VR can be immersive or non-immersive/desktop. Immersive VR present images through head mounted display, hand controllers and headphones while desktop VR presents images on a computer monitor and allows the user to interact with the images. To summarize the far-reaching benefits of the use of VR in learning, Choi et al. (2016) asked: "would you rather read about humans going to the moon or see for yourself what it was like to walk on the moon with Neil Armstrong"? Virtual Reality can be used to allow students to tour places and campuses of their dream that they may likely never see in person. It can also be used for work force preparation. Students are placed on work places scenarios and then they are able to put the workplace skills they are learning into use without putting the company or customers at risk. For example, a lecturer can design a VR experience to assess the learner on the steps to replace a broken electrical switch. The VR experience prevents the learner from electrocution or turning off the power to thousands of customers. Another benefit of VR is the fact that students who cannot physically attend a lecture can do so through VR designed lectures. VR in the classroom can also help students to visualize complex concepts while making the lessons fun and engaging.

Virtual Reality is therefore a very important tool in improving the teaching and learning process in this new normal and enhancing lecturers' job performance. Nissim and Weissblueth (2015) carried out a study on the experiences of pre-service student teachers in their usage of VR and its effect on their 21st century skills and growth processes. The finding showed that using VR in a learning

environment helped the student-teachers to be more innovative and creative in their tasks. Similarly, Edeh et al. (2020) carried out a study on the impact of emerging technologies on the job performance of educators in selected tertiary institutions in Nigeria. The result showed that there was a significant improvement on the job performances of educators due to their usage of various emerging technologies including the use of VR. The foregoing shows that there is a direct relationship between the use of VR and Lecturers' job performance.

Computational Thinking and Lecturers' Job Performance

In recent years, Computational Thinking (CT) has been promoted by educational stakeholders as a fundamental skill that should be integrated into the teaching and learning process. It is viewed as an important skill since today's students will not only work in fields influenced by computing, but also need to deal with computing in their everyday life and in today's digital world. Also, the advent of the Covid-19 pandemic and the new normal has also brought about a growing demand for students and workers with computational thinking skills. Taylor et al. (2020) described computational thinking as a process that involves taking a complex problem, understanding what the problem is, developing the possible solutions and then presenting these solutions in a way that a computer, a human, or both, can understand. Denning and Tedre (2019) highlighted four key techniques to computational thinking. These are: decomposition; breaking down a difficult problem into minor more controllable parts, pattern recognition; looking for similarities among and within problems, abstraction; ignoring irrelevant detail while focusing on the most important part and algorithms; developing a step-by-step solution to the problem.

Computational Thinking (CT) is applicable to every field of learning, though CT is the foundation for fields such as programming, data science and machine learning, lecturers in other disciplines will need these skills to design solutions in their disciplines, create new tools, analyze and interpret data, communicate with those who automate computer-supported solutions etc. It is imperative therefore that lecturers of all subject areas need to be confident and competent computational thinkers themselves to meet the demands of the new normal. The findings of a study carried out by Onyema (2019) on the

integration of CT as an emerging technology to the learning process, showed that CT enhances innovation, creativity and promote the attainment of educational goals. Studies in recent times have contributed a considerable amount of literature to the growing knowledge base about teaching and learning computational thinking, however, not much has been done to gather data on lecturers' perspective (Denning and Tedre, 2019). Likewise, there is little research on the effects of computational thinking on the job performance of lecturers.

Video Conferencing and Lecturers' Job Performance

The e-learning space is growing rapidly and video conferencing is a big part of it. Video conferencing help to bridge the gap between geographical boundaries and connects students and teachers. Teaching by video-conferencing is a unique method of providing virtual face-to-face interaction that enables immediate peer and teacher interaction and feedback (Onyema, 2019). During the Covid-19 pandemic lockdown, video conferencing tools such as Zoom, Google Meet, Microsoft Teams, were used to facilitate remote learning. With video conferencing, students connected with educators from anywhere in the world, experienced culture and collaborated with other students not physically present with them. In this new normal, learning is no longer limited to a location and with the internet students can gain the benefit of world class education no matter where they are.

Video conferencing has become a major part of the learning environment and the extent to which lecturers use this technology will determine their job performance. The data from a survey conducted by Robert (2018) where educators and administrators in colleges and universities were interviewed indicated that 88% of the respondents believed video conferencing will allow more people to complete advanced degrees and 73% believe video conferencing will reduce student dropout rates. Similarly, Onyema (2019) examined the importance of video conferencing technology on job performances of educators. The finding revealed that majority of the respondents agreed that video conferencing will enhance their job performance and help in accomplishing their tasks. The finding of a study carried out by

Ohia and Ukala (2018) on the management of 21st century digital classroom as predictor of lecturers' job performance in the tertiary institutions showed that computer, online learning, multimedia usage management significantly predicted lecturers' job performance in tertiary institutions.

Statement of the Problem

In Nigeria, employers of labour have consistently maintained that graduates produced by higher education institutions were not adequately groomed to take up challenges of the work place with little or no proficiency in collaboration, communication, critical thinking, problem solving and ICT skills. Also, the new normal in education has put new demands on lecturers in the way they should plan and deliver the curriculum. Lecturers no longer act as instructors but as facilitators, content developers and designers of virtual learning. Going forward the job performance of lecturers cannot be separated from the extent to which they use emerging technologies which is necessary to meet the demands of the new normal of higher education and the world of work. Sadly, it is worrisome to observe that some lecturers still do not appreciate the opportunities that emerging technologies usage presents for improving their job performance. Some of them lacked the basic knowledge and awareness of new technologies that would help them in their instructional delivery, research and data management. Some of the lecturers have not embraced training and development that can improve their capacity in the usage of emerging technologies. All these result in poor quality of instructional delivery which may hinder the achievement of educational goals. This bothersome situation has attracted the attention of the researchers. Hence, this study examined the predictive power of emerging technologies usage on lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

Aim and Objectives of the Study

The study investigated the predictive power of emerging technologies' usage on lecturers' job performance in meeting the demands of the new normal in Rivers State universities. Specifically, the study sought to:

1. Determined the extent virtual reality usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities.
2. Examined the extent to which computational thinking usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities.
3. Ascertained the extent to which video conferencing usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

Research Questions

The following research questions were answered in this study:

1. What is the extent to which virtual reality usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?
2. To what extent does computational thinking usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?
3. What is the extent to which video conferencing usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?

Hypotheses

The following hypotheses were tested in this study:

$H0_1$: Virtual reality usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

$H0_2$: Computational thinking usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

$H0_3$: Video conferencing usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities?

Methods

The research design used for this study was the correlation design. The population for the study was the 2732 lecturers in the 3 public universities in Rivers State. The 3 public universities are University of Port Harcourt (UNIPORT), Rivers State University (RSU) and Ignatius Ajuru University of Education (IAUE) with 1,548, 574 and 610 lecturers respectively (Source: Registry Department of the various institutions, 2021). A sample of 821 lecturers which represented 30% of the population was used for the study. The sample was made up 465 lecturers from UNIPORT, 173 lecturers from RSU and 183 lecturers from IAUE. Proportionate stratified random sampling was used to draw the sample for the study. Two questionnaire instruments titled: Emerging Technologies Usage Scale (ETUS) and Lecturers Job Performance Scale (LJPS) were used for the study. The ETUS had 2 sections. Section A dealt with demographic information. Section B had 21 items. It was divided into 3 parts. The LJPS had 10 items. The response pattern for the items was structured on a four (4) point Liket type scale of Strongly Agree (SA), Agreed (A), Disagree (D) and Strongly Disagree (SD) with values 4, 3, 2 and 1 respectively. Cronbach Alpha technique was used to establish the reliability. LJPS had a reliability coefficient of 0.76. The following reliability coefficient were obtained for the 3 parts of the ETUS; Virtual Reality: 0.74, Computational Thinking: 0.79, Video Conferencing: 0.68 and the entire instrument: 0.85. Simple regression was used to answer the research question while t-test associated with simple regression was used to test the null hypotheses at a probability level of 0.05.

Results

Research question 1: What is the extent to which virtual reality usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?

Table 1: Simple Regression Analysis on the Extent Virtual Reality Usage Predicted Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

			Adjusted	Std. Error of

Model	R	R Square	R Square	the Estimate
1	.135[a]	.018	.017	6.169

Table 1 showed that the regression coefficient R was .135 while the squared regression value was .018. This implied that virtual reality usage predicted lecturers' job performance by 18% as indicated by the coefficient of determinism. Therefore, the remaining 82% was predicted for by other factors.

Research question 2: To what extent does computational thinking usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?

Table 2: Simple Regression Analysis on the Extent Computational Thinking Usage Predicted Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.083[a]	.007	.006	6.210

Table 2 showed that the regression coefficient R was .083 while the squared regression value was .007. This implied that computational thinking usage predicted lecturers' job performance by 7% as indicated by the coefficient of determinism. Therefore, the remaining 93% was predicted for by other factors.

Research question 3: What is the extent to which video conferencing usage predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities?

Table 3: Simple Regression Analysis on the Extent Video Conferencing Usage Predicted Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.139[a]	.019	.018	6.171

Table 3 showed that the regression coefficient R was .139 while the squared regression value was .019. This implied that video conferencing usage predicted lecturers' job performance by 19% as indicated by the coefficient of determinism. Therefore, the remaining 81% was predicted for by other factors.

Hypotheses

$H0_1$: Virtual reality usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

Table 4: T-test Associated with Simple Regression Analysis of Virtual Reality Usage on Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig
(Constant)	46.759	3.909		11.961	.000
Virtual Reality	-.663	.170	-.135	-3.904	.000

Table 4 revealed that the standard errors of measurements are 3.909 and 0.170 respectively. With a degree of freedom at 819, the t-test calculated was -3.904, while the p-value of 0.00 was less than the alpha level of 0.05.Therefore the null hypothesis was rejected. Hence, virtual reality usage significantly predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities**.**
Y= 46.759 - 0.663X

$H0_2$: Computational thinking usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

Table 5: T-test Associated with Simple Regression Analysis of Computational Thinking Usage on Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	T	Sig
(Constant)	29.337	.888		33.020	.000
Computational Thinking	.125	.053	.083	2.380	.018

Table 5 revealed that the standard errors of measurements were .888 and .053 respectively. With a degree of freedom at 819, the t-test calculated was 2.380, while the p-value of .018 was greater than the alpha level of 0.05. Therefore the null hypothesis was not rejected. Hence, computational thinking usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities**.** Y= 29.337 + 0.125X

$H0_3$: Video conferencing usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities.

Table 6: T-test Associated with Simple Regression Analysis of Video Conferencing Usage on Lecturers' Job Performance in Meeting the Demands of the New Normal in Rivers State Universities.

	Unstandardized Coefficients	Standardized Coefficients

Model	B	Std. Error	Beta	T	Sig
(Constant)	67.087	3.910		12.042	.000
Video Conferencing	-.683	.170	-.139	-4.021	.000

Table 6 revealed that the standard errors of measurements were .3910 and .170 respectively. With a degree of freedom at 819, the t-test calculated was -4.021, while the p-value of 0.000 was less than 0.05. Therefore the null hypothesis was rejected. Hence, video conferencing usage significantly predicted lecturers' job performance in meeting the demands of the new normal in Rivers State universities**.** Y= 67.087 - 0.683X.

Discussion

Virtual Reality and Lecturers' Job Performance

Findings from the study showed that virtual reality usage accounts for 18% of lecturers' job performance in meeting the demands of the new normal. The remaining 82% is predicted for by other factors. It was also revealed that virtual reality usage significantly predicts lecturers' job performance in meeting the demands of the new normal in Rivers State universities. This finding is in tandem with the study of Abdullahi (2020) who examined the determinants of virtual labs adoption among physics teachers in Ilorin-west local government area of Kwara State and found that Physics teachers' perceived usefulness and ease of use of virtual laboratory have positive influence on their performance. Also the finding agrees with the study carried out by Ogbunaya and Onele (2018). Their study revealed that there was a significant difference between the outcome of the teaching done with virtual reality and those that did not. The finding of this research has strong implications for technology usage in the teaching and learning process in Nigerian universities. It is an indication that when virtual reality tools are deployed, it will boost lecturers' performance and increase educational outcomes. Lending credence to this, Nissim and Weissblueth (2015) study showed that using virtual reality in a learning

environment helped student-teachers to be more innovative and creative in their tasks. Soetan et al. (2020) asserted that educators are fast recognizing the fact that the use of VR tools offers the capacity of unending repetitions for learning purposes and they are time efficient. Students are becoming more and more technologically savvy and their learning styles keeps evolving; adoption of emerging technologies like virtual reality will help lecturers to improve their job performance in meeting this challenges.

Computational Thinking and Lecturers' Job Performance

The result from the study showed that computational thinking usage accounts for 7% of lecturers' job performance in meeting the demands of the new normal. The remaining 93% is predicted for by other factors. It was also revealed that computational thinking usage does not significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities. The possible reason why computational thinking does not significantly predicted lecturers' job performance could be because of low level of awareness. However, the findings of Onyema (2019) on the integration of computational thinking as an emerging technology to the learning process revealed that computational thinking boost creativity, innovation and increases job performance. Another possible reason while computational thinking predicts lecturers' job performance to a low extent could be because the foundation of computational thinking is in such fields as programming, data science and machine learning and so lecturers in other disciplines most likely do not perceive the importance and benefits of using computational thinking in their lessons. On the other hand some lecturers are aware of the use of CT, however they have not created the opportunities to apply these technological skills in their instructional process and so have not realized the enormous benefits it impacts on their job performance. Hence, it is imperative that lecturers address the various issues that obstruct the integration of computational thinking in their instructional planning and process in order for them to maximize the benefits offered by this emerging technology.

Video Conferencing and Lecturers' Job Performance

The finding from the study showed that video conferencing usage accounts for 19% of lecturers' job performance in meeting the demands of the new normal. The remaining 81% is predicted for by other factors. It was also revealed that video conferencing usage significantly predict lecturers' job performance in meeting the demands of the new normal in Rivers State universities. In support of this finding, Edeh et al. (2020) study revealed that there was a significant improvement on the job performances of lecturers due to their usage of various emerging technologies such as video conferencing. The result from this study is also consistent with the assertion by Robert (2018) that emerging technology usage like video conferencing significantly impact on employees' performance. From the study, it can be inferred that emerging technologies like video conferencing has the potentials to enhance lecturers' abilities to use digital tools, enrich their knowledge and experiences and increase their job performance. This finding also support the submission of Onyema (2019) who posited that video conferencing will enhance their job performance and help in accomplishing their tasks in this new era of blended learning and flipped classroom. The new normal in a learning environment promotes student-led learning and the use of virtual tools instead of face-to face interactions. Video conferencing is a very essential tool to meet the demands that this new method of teaching and learning pose, hence it is a very important predictor of lecturers' job performance.

Conclusion

There is no doubt that emerging technologies have made a significant penetration into the education sector and they have great potential for impacting the job performance of lecturers. The study establishes that emerging technologies usage predicted lecturers' job performance in meeting the demands of the new normal to a high extent. This means that if more lecturers use emerging technologies, the quality of their output would increase. This would also have corresponding effects on their students' performances.

Recommendations

Based on the findings, the following recommendations were made:

1. Lecturers should update their digital skills in line with emerging trends in education which requires technological knowledge and skills to meet the needs of the new normal.
2. University administration in collaboration with heads of department should adopt an employee mentoring system where lecturers who have a robust knowledge of emerging knowledge especially computational thinking and are using it in their instructional process can be paired with others.
4. University management should provide the enabling environments and supportive infrastructures that aid the smooth adoption of video conferencing.

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IMPROVING THE CLASSROOM PRACTICES OF BASIC SCIENCE PRE-SERVICE TEACHERS THROUGH E-INTERACTIVE REFLECTIVE STRATEGIES FOR EFFECTIVE INSTRUCTIONAL DELIVERIES IN THE "NEW NORMAL" ERA

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Abstract
Emphatically the Covid 19 pandemic era left a cancerous wound in the fabric of Nigerian Education sector and one of the consequences of the pandemic era is the reformation of the sector and subsequently the emergence of the "New Normal". The growing pace of this reformation predispose additional demand for stakeholders to key into the 'New Normal'. These are the issues addressed in this study which examined the effect of e-interactive reflective teaching strategies on the classroom practices of basic science pre-service teachers in three colleges of education in Ogun State. The study adopted a Pretest, posttest experimental group design and the result obtained and analysed with MANCOVA statistical tool at 0.05 level of significance revealed that there was a significant mean effect of the treatment in all the dependent measures in the experimental groups, indicating that e-interactive reflective strategies should be adopted for the training of Basic Science Pre-Service teachers in the 'New Normal' Era.

Key words: New-normal, Interactive strategies, Classroom practice, Instructional delivery.

Introduction

The rapid pace of educational reformation occasioned by the incidence of COVID-19 Pandemic in most parts of the world has fueled the use of science and technology as both are being harnessed to solve human problems and correct the anomalies created in the education sector as a result of the menace. Science Education has become an inevitable panacea essential for the nation to compete favourably with her contemporaries all over the world. Science is an axle on which the development and progress of both individuals and nations depend. Besides, Science Education is expected to produce scientifically literate individuals and equip potential scientists with skills, knowledge and attitudes that would enhance the global, economic, social and industrial growth in the 'new normal 'era.

In addition, Science Education has been observed as a bedrock on which secondary and tertiary levels of education are based. Onwu (2002) and Olosunde(2009) also suggested that Science Education should be taught right from primary schools where stimulation of the natural curiosity of children and their enthusiasm for learning starts before the years of drill and role learning make some of them to lose interest in science and school. Amalina(2012), corroborated this view when he submitted that children's first year of school is a period in which concepts as well as the connective, cognitive, affective and social processes are constructed and transmitted.

Teacher qualification has also been found to affect pupils' achievement. Ammalina(2012) remarked that teachers qualification has a significant effect on pupils performance in primary schools as he holds the belief that qualified teachers have a richer background experience to draw from and can give insight and ideas to the course of teaching and learning, they are open to correction and are less dictatorial in classrooms. Although the minimum teaching qualification for admission into the teaching profession in Nigeria is the three-year Nigeria Certificate in Education (NCE). Owolabi (2012) posited that teachers' experience, qualifications and students' achievement are related because students taught by more experienced teachers achieved better in their course work because their teachers have mastered the content and acquired classroom management skills to deal with different types of classroom problems. In Ogun State, for

instance 75% of teachers in the public primary schools are NCE holders and majority of them are from Non-Science based disciplines like Art and Social Sciences (SUBEB, 2016). To worsen the case, the practice whereby only one teacher teaches all subjects in primary I-VI make some teachers skip topics and avoid Basic Science as a result of lack of knowledge in science concepts, and inadequate training and dissatisfaction in the job thereby encouraging younger teachers to leave the profession in pursuit of what they perceive as better jobs.

The concept of classroom practice is one that cannot be ignored in teacher preparation and delivery programmes. The belief of many educationists is that if academic standard is rigorous, curriculum and assessment are aligned to those standards and teachers possess the skills to teach at the desired level, definitely students' performance will improve. However, the basic idea behind good classroom practice is to enhance excellent learning outcomes of students. Rice (2008) expressed the opinion that efficient learning occurs as a result of efficient teaching and efficient teaching requires teachers to understand specific learning concepts and the conditions under which they can be learned. Learning is evidenced not only in changes in behaviour but also changes in cognitive processes. Therefore, teachers' classroom practices which include: expression of mastery of knowledge of subject matter, teacher clarity of expression, communication skills, evaluation procedures and so on. The ability of students to perform specific skills, attain high scores in cognitive assessment and observable attitudinal changes are the quantifiable criteria for measuring learning outcomes in students.

According to Amalina (2012) in order to develop effective lesson plans to bring about the attainment of desired objectives, teachers must possess a variety of skills and also have a solid understanding of different concepts, ideas and theories. This will help to improve students learning in science. For this study, interactive approach shall be adopted. Although, there are different types of e-reflective teaching, this study will examine the face book form of e-reflective teaching since our teaming youths are always on face book chatting with their peers.

The e-interactive reflective strategy is a reflective type of self-reporting strategy where student teachers diaries may be combined with suggestions and/or feedback from tutors and/or peers of the student teacher. It captures the idea and synergy of a group by allowing individual members to share, express and reflect on process as well as progress of student teachers on facebook (Yuskel, (2013).

Video Lesson Recording Strategy is a type of self-reporting reflective teaching strategy where a video recorder is located in a place where it can capture the exchanges which take place during a lesson. With the microphone placed on the teacher's table, much of the teacher's language can be recorded as well as the exchanges of many of the students in the class for a one or two week period and then randomly selecting a cassette for closer analysis (

Research findings have shown that Video lesson recording improved pre-service teacher classroom practices and that the pre-service teachers have reported that through the opportunity provided by video that the guided reflective activity brought a heightened awareness of their teaching strengths and weaknesses. Carrison, (2009) and Njenga (2010) in their own separate studies found that employing the observation instrument, coupled with the formalized act of video-recording analysis, allowed the pre-service teachers to be focused on details of teaching which is often overlooked in less formal reflective practice or formal evaluation.

However very few literature have been recorded on reflective teaching strategies in the area of Basic science Education particularly in Nigeria. Thus, this study determined the effect of exposing pre-service Basic science teachers to video lesson recording strategy and e-interactive reflective strategy forms of reflective teaching strategies on their classroom practices.

Statement of the Problem

Researchers have continued to acknowledge the professional development of science teachers as a most critical component of the national educational system. The goal of teacher education programmes should not be to indoctrinate or train teachers to behave in a routine or prescribed manner, but to train pre-service teachers to reflect soundly on their teaching in the classroom and consider its

effect on their classroom practices. Although, several studies have been conducted on reflective teaching in the area of English Language, Social Studies, Biology, Mathematics and General Education. However, very little literature have been documented in the area of Basic science particularly in Nigeria. Therefore, it may be necessary to find out the effect of reflective teaching in the area of Basic science among pre-service teachers. It is against this background that this study determined the effect of e-interactive and video lesson recording reflective teaching strategies on pre-service Basic science teachers' classroom practices .

Hypothesis

This study will test this null hypothesis at 0.05 alpha level of significance

$H0_1$: There is no significant main effect of treatment on pre-service teachers' classroom practices: Communication Skills Use of Instructional materials, Teacher – Student Interaction, Assessment /Evaluation Skills and Use of Allocated Time

Research Design

The study adopted a pretest -posttest, control group, quasi experimental research design. The design is represented as:

O_1 X_1 O_4 Experimental group I
O_2 X_2 O_5 Experimental group II
O_3 X_3 O_6 Control group

Where O_1, O_2, and O_3 represent the pretest for the experimental groups 1, 2 and control respectively, while O_4 O_5 and O_6 represents the posttest score for the experimental groups 1,2 and control group respectively.

X_1 - Treatment for group 1 involving e- interactive Reflective Strategy (IR)
X_2 - Treatment for group II involve Video Lesson Recording Strategy (VLR).
X_3 - Control group involving Traditional Lecture Strategy without reflection.

Variables in the Study

The variables in this study are:

1. **Independent Variable:** Mode of instruction at three levels.
   (a) e- Interactive Reflective Strategy
   (b) Video Lesson Recording Strategy
   (c) Traditional Lecture
2. **Dependent Variables:** pre-service teachers classroom practices (Communication Skills, Use of Instructional, Teacher – Student Interaction, Assessment Skills and Use of Allocated Time)

Sample and Sampling Procedure

A multi-stage sampling and sampling procedure was adopted for this study. First, purposive sampling was used to select three Colleges of Education (COE) from Ogun state for the study. The criteria for the selection of the COE were based on the following

- **a)** COEs where pre- service teachers go on teaching practice once during their training.
- **b)** COEs where pre-service teachers have access to Global System of Communication(GSM)
- **c)** COEs where pre- service teachers were posted to schools where GSM services are easily accessible
- **d)** COES where pre-service teachers have been practicing reflective teaching

Research Instruments

Five research instruments were used for the study.

1. Pre-service Teachers' Instructional Guide for e-interactive Reflective Strategy (PIGIR).
2. Pre- service Teachers' Instructional Guide for Video Lesson Recording Strategy(PIGVLR)
3. Pre- service Teachers' Instructional Guide for Traditional Lecture Strategy (PIGTL)

b) Pre -service Teachers' Classroom Practice Observation Scale (PCPOS)

Validity and Reliability of the instruments

The face and content validity of the instruments were determined by giving the instruments to research experts in education for corrections, comments, criticisms and suggestions. The instruments were then administered on groups of Pre-service teachers who were not part of the targeted population. Three research assistants were employed each as raters to observe and rate as every aspect of the strategy was implemented by the pre-service teachers to determine the reliability of the instruments. The inter-rater indices were determined as 0.74, 0.73, 0.72, and 0.71 respectively using Scott's π formulae.

Method of Data Analysis

The data collected was analysed using inferential statistics of Multivariate Analysis of Covariance (MANCOVA) at 0.05 level of significance.

Procedure

The selected COEs were randomly assigned to treatment and control groups. All the participants were then given a pretest based on their classroom practices. The participating experimental groups were exposed to face book reflection and video lessons reflection recording respectively for two weeks. The Pre-service instructional guide stimuli instruments contained the general principles of face book reflective and video lessons recording reflective strategies for experimental group 1 and experimental group II respectively. After the training, the treatment and control groups were given a post test on their classroom practices

Presentation of Results / Testing of Hypothesis

$H0_1$: There is no significant main effect of treatment on pre-service teachers' classroom practices (Communication Skills Use of Instructional, Teacher – Student Interaction, Assessment Skills and Use of Allocated Time)

Table 1: Summary of MANCOVA of Post treatment of Pre-service teachers' Classroom Practices by Treatment

Source	Dependent variable	Type III sum of Squares	Df	Mean Square	F	Sig	Partial Eta Square
Corrected Model	Post communication skills	707.918(a)	13	54.455	4.142	.000	.534
	Post use of instructional Material	2555.692(b)	13	196.592	99.814	.000	.965
	Post teacher – student Interaction/knowledge	3667.231(c)	13	282.095	92.357	.000	.962
	Post assessment skills/ Evaluation	949.157(d)	13	73.012	15.008	.000	.806
	Post time use	2876.161(e)	13	221.243	52.499	.000	.936
Intercept	Post communication skills	66.915	1	66.915	5.090	.029	.098
	Post use of instructional Material	16.248	1	16.248	8.250	.006	.149
	Post teacher – student Interaction\knowledge	38.441	1	38.441	12.585	.001	.211
	Post assessment skills/Evaluation	74.196	1	74.196	15.252	.000	.245
	Post time use	63.361	1	63.361	15.035	.000	.242
Treatment	Post communication	282.789	2	141.394	10.756	.000	.314
	Post use of instructional Material	1318.799	2	659.399	334.792	.000	.934
	Post teacher – student Interaction	1756.764	2	878.382	287.580	.000	.924
	Post assessment skills	282.789	2	677.043	160.656	.000	.559
	Post time use	1354.086	1	63.361	15.035	.000	.242

Discussion of Results

Effect of Treatment on Pre-service Teacher Classroom Practices

Findings of the study showed that there was a significant main effect of treatment on all the dependent measures (Communication Skills, Use of Instructional Materials, Teacher-Student Interaction/ knowledge, Assessment/ Evaluation Skills and use of allocated time). The experimental group I (e-interactive) was the most effective with the highest mean score followed by the experimental group II (video lesson recording), while the traditional lecture group recorded the least mean score. The introduction of treatment in the two experimental could be responsible for the improved classroom practices of the pre-service teachers in the study. When pre-service teachers meet on facebook for reflective activities before or after they were able to brainstorm and share ideas about their experiences in class and some of the remedy they adopted to solve some the issues that came up during their lessons. .This however is in line with the submission of Yuskel (2013), using facebook for reflective activities allow pre-service teachers to recognize the problems they encountered quite easily and also identify the difficulties their peers experienced while teaching, and take corrective measures for subsequent lessons in the 'new normal ' era. The analysis presented in Table 1 Showed that the Video Lesson Recording (VLR) experimental group was significantly different from the control group. This could be attributed to the size of the group, since only an individual is involve in reflective activities there could be limited ideas generated during the self reflection for improving the pre-service teacher classroom practices. Nevertheless VLR still have some advantages over the Traditional teaching method where pre-service teachers do not engage in any form of reflection in their teaching. This fact is supported by Njenga (2010) who observed that the use of VLR enable pre-service teachers' to connect theory and practice, improve instructions and focus on student-centered thinking as opposed to behaviours.

The implication of the result obtained in this study is that in the 'new normal era' when most teaching/learning are virtual in nature, face book reflective and video lessons recording methods would be

most appropriate for boosting the classroom practices of pre- service teachers and by extension students' achievement and attitude towards basic science.

Conclusion

The finding from this study showed that reflective teaching strategy was effective on improving the classroom practices of Basic science teachers. This may attributed to the fact that in the two strategies pre-service teachers reflected on their classroom practices before and after pre-service teachers share their experiences in class with their colleagues on facebook. Applying reflective teaching to classroom practice in Basic science will make pre-service teachers to depart from the routine pattern of teaching during and after training from the college. Finally reflective teaching strategies can be used to improve teaching and learning of some selected concepts in Basic science.

Recommendations

From the findings of this study, the following recommendations were made:

1. Both Pre-service teachers and in service should adopt reflective teaching strategies teaching and learning Basic science since it give them the opportunity to reflect on their classroom practices.
2. School administrators should encourage Basic science and other subject teachers to practice reflective teaching using e-interactive reflective and video lesson recording to improve student performance in Basic science.
3. National Commission for Colleges of Education (NCCE) should as a matter of urgency include reflective teaching in the curriculum of teacher education in Nigeria.
4. The teachers already on the field should be trained to have the knowledge of reflective teaching through organized seminars, workshops and conferences to expose them to the essential features of the approach to improve their classroom practices and enhance students achievement in Basic science.
5. In order to help teachers become more reflective, it is recommended that teacher preparation programmes should

include a course that helps freshmen grasp the significance of reflective practice.

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EFFECTIVENESS OF THE QUALITY CONTROL PROCEDURES IN UNIVERSITY OF BENIN IN THE NEW NORMAL

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Abstract
The study was an assessment of the effectiveness of the quality control procedures put in place in the University of Benin in the new normal occasioned by the COVID-19 pandemic. The descriptive survey research design was adopted for the study. The population of the study is comprised of 114 University administrators, I,779 lecturers and 39,243 undergraduates in 14 faculties. The sample size of the study was 57 Administrators selected using 50% and 55 lecturers and 350 students purposively selected. Seven (7) faculties, constituting 50% of the faculties were used for the study. The result of the analysis revealed that placing educative signs and symbols around the campus to ensure the' Use of Face Mask', making provision for sanitizers at strategic places for the 'Use of Hand Sanitizers', making provision for hand washing equipment with soap and water at strategic locations for 'Regular Hand Wash' and advising sick persons to go to the health center for 'Preventing the Sick from Coming to School". The study also showed that quality control for 'Social Distancing' was partially implemented while no action was taken on 'Environmental Decontamination'. The study further revealed that the level of compliance to the COVID-19 prevention protocols in the University was however moderate. It was therefore concluded that though quality control procedures to ensure COVID-19 prevention protocols were in place in the University, there was poor enforcement of compliance. It was therefore recommended that for effective quality control, institutional framework and strict monitoring mechanisms among others be put in place to ensure compliance to set rules and regulations.

Key Words: Effectiveness, Quality Control Procedures, Compliance, Enforcement, New Normal

Introduction

The new normal is occasioned by the emergence of the COVID-19 disease, a global pandemic that is ravaging the world as declared by the World Health Organisation (WHO) in March of 2020.According to WHO, COVID-19 is an illness caused by a novel corona virus which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. The education sector appears to be one of the most affected by the pandemic because it is peopled and the human-human mode of transmission of the virus via respiratory droplets makes students and pupils including the staff members highly prone to the disease. Students by nature, must meet and mingle in classrooms, halls, lecture theatres or halls, hostels, playground and so on (Momoh and Obiweluozor, 2020). In order to curtail the spread of the disease, the Federal Government of Nigeria directed all schools and tertiary institutions to close down on the 23rd of March, 2020. While some schools resorted to virtual teaching as against the traditional face-to-face teaching, others, especially the public universities, did not engage in any academic activities because, during the period of the lock down, the Academic Staff Union of Universities (ASUU) in Nigeria were on strike till the schools were formally reopened in September, 2020.

To forestall the spread of COVID-19 in Educational institutions, the World Health Organisation (WHO) recommended some basic principles that can be adopted to prevent the spread of COVID-19 in schools; sick students and staff members should be barred from coming to school till they are well, schools should enforce regular hand washing with running taps and soap strategically placed in the school premises, waste management facilities should be provided, school building, offices and classrooms should be cleaned and disinfected at least once a day, schools should promote social distancing, sitting arrangement in the class should be spaced at least one meter apart, signs and other enlightenment captions and jingles encouraging hygiene practices should be displayed around the school premises among others. To ensure effective implementation of these

recommendation, institutional mechanisms for quality control procedures must be put in place. They include setting quality standards, deciding on which to focus on, creating operational processes, reviewing results, getting feedback and making improvements.

Quality control is a mechanism for ensuring that an output conforms to a predetermined specification (Harvey, 2004). It is a process of monitoring and evaluating output for quality by testing or checking services to ensure that they meet set standard and precise specification. Quality control in higher institution involves how management determines if its teaching and learning and assessment activities is working as planned and as intended, and to verify that such activities are carried out satisfactorily; this includes feedback systems through strict and regular monitoring. The National Universities Commission (NUC) as one of the agencies of quality control in Nigeria education, is charged with this role as part of its responsibility as an advisory agency on higher education.

Okechukwu (2020) asserts that organizations over the world are expected to be efficient and effective in the provision of their services. He further argued that in most cases, these organizations fail to deliver quality services. For instance, despite some efforts made by the governments of various nations and employers to improve on the quality of services of their establishments, some still render poor services. This trend when left unchecked portends danger to the economy and the society. This is more so in developing countries like Nigeria where the education sector, specifically the public tertiary institutions is plagued with deficient infrastructure and inadequate funding. It is therefore imperative to ensure and maintain quality standards, to ensure that quality is maintained and errors are reduced or eliminated. Hence, Juran (1988) defined quality control as a universal managerial process for conducting operations so as to provide stability to prevent adverse change and to maintain the status quo. This can be applied to assessing the quality control procedures put in place by higher institutions to ensure effective implementation of its policies, rules and regulations which includes the basic principles that can be adopted to prevent the spread of COVID-19 in a bid to adjust to the new normal occasioned by the spread of the virus.

As at June 2021, the Nigeria Centre for Disease Control (NCDC) confirmed that cases of COVID -19 in Nigeria has risen to 166,730 with 2117 deaths recorded hence the emphasis on strict compliance to COVID infection prevention and control measures. This is quite alarming despite all the measures put in place to curtail its spread. Therefore, efforts at mitigating its impact, especially in higher institutions and specifically in public tertiary institutions plagued with inadequate classrooms and overcrowded lecture theaters that sometimes host as many as a thousand or more students for lectures and examination deserves to be assessed for effectiveness. The University leadership is expected to put quality control measures in place to ensure compliance. Benedek (2015), argued that compliance management is a relevant approach in the strictly regulated education sector as it supports school operations ranging from admission to quality control by focusing on compliance with laws and regulations. He further posited that to ensure compliance to guidelines, there must be quality controls for effectiveness and efficiency of school operations. While this is the responsibility of every staff member, including students, school leadership at all levels is ultimately saddled with the responsibility of ensuring informal controls, implementation, documentation and monitoring of the system. They must set the tone for compliance to set rules. Those enforcing compliance, in this case the school administrators, have the responsibility of enlightening staff and students on why they should comply to set rules and regulations by providing adequate information. A study on the influence of enlightenment on compliance carried out by Katzev and Brownstein (1989), revealed a significant effect of information on effectiveness.

In a bid to adjust to the new normal in the University of Benin, some faculties set up committees to promote and enforce compliance to COVID-19 prevention protocols as advocated by the World Health Organisation (WHO, 2020). These include the use of face masks, regular washing of hands with soap and water, environmental cleaning and decontamination, preventing sick students/staff from coming to school and social distancing. ‘No Face Mask, No Entry’ signs could be seen in major entrances in the universities. As the COVID-19 pandemic spreads across the globe, millions of people are heeding the advice of health experts to wash their hands as one of the most

effective ways to prevent transmission of the disease (The World Bank, 2020). It has however been observed that compliance to these measures have declined sharply. This corroborated the study of Odii (2021) on the declining adherence to COVID-19 guidelines in Nigeria universities which revealed a sharp decline. Classrooms and lecture theaters are still overcrowded for lectures and examinations despite the change in the timetable to reduce number of students in class at a time, though running tap buckets adorn the faculties and administrative offices, they are not used, very few students and staff wear face masks, a few put it on their chin while majority do not wear it at all. While physical distancing, especially among students is not maintained; meetings with large staff members are held. Although, pedestrians are forced to use the face mask at the entrance gate into the university, as soon as they pass through, they remove it. It also appears that the online teaching and uploading of lecture materials to minimize social contact is not effective despite the series of training as lecturers have been heard complaining of lack of data and laptop for the exercise.

Though the observed decline in compliance to COVID-19 prevention protocols is not unexpected as there has been a drop in the rate of infection in Nigeria as reported by NCDC, some questions have risen from this low or non-compliance; could it be that the COVID-19 prevention measures put in place are not effective? Were there quality control procedures to sustain compliance? This study therefore intends to assess the effectiveness of the quality control procedures put in place in Nigeria Universities to prevent the spread of COVID-19 using University of Benin as a case study.

Research Questions

The following research questions guided the study.

1. What are the quality control procedures put in place to ensure compliance to the basic principles of COVID-19 prevention in university of Benin?

2. What is the level of compliance to the basic principles of COVID-19 prevention in university of Benin?

Methodology

The study is a descriptive survey research which adopted the *expost-facto* design. The population of the study was 114 University administrators (1 Vice-Chancellor, 14 Deans and 99 Heads of Departments) andI,779 lecturers and 39,243 undergraduates in the 14 Faculties of the University of Benin (Source: University of Benin Academic Planning Division, 2018/2019 Session).

The sample size of the study were 57 Administrators in 7 faculties, constituting 50% of the Administrators and 10 lecturers and 50 undergraduates purposively selected from each of the sampled 7 faculties (55 out of 70 lecturers were eventually used for the study). The Multi stage sampling technique was used for the selection to ensure it cuts across the Arts, Sciences and Humanities. The instruments that was used for the study is titled: 'Quality Control Procedures on COVID-19 Prevention Checklist' (QCPCPC) and 'Compliance to the Basic Principles of COVID-19 Prevention Questionnaire' (CBPCPQ). The Vice-Chancellors, Deans and Heads of Department provided information on the quality control procedures put in place to ensure compliance to the basic principles of COVID-19 prevention on the Check list while lecturers and students responded to the Questionnaires to assess their level of compliance to the principles. The instruments were validated by two Senior Lecturers in the University of Benin. The questionnaire was further be tested for reliability by pre-testing it in the faculties that were not be part of the study before it was administered on the final respondents. Frequency, simple percentages and mean were used for the analysis. The benchmark used to measure the level of effectiveness to answer research question 2 on level of compliance is less than 50% - low, 51% to 60% - moderate and 61% and above is high.

1. What are the quality control procedures put in place to ensure compliance to the basic principles of COVID-19 prevention in the University of Benin?

Table 1: Quality Control Procedures put in place to ensure Compliance to the Basic Principles of COVID-19 Prevention

SN	Quality Control Procedures put in place in line with COVID-19 prevention protocol	Frequency	Percentage %
	Use of Face Masks		
1	Placing educative signs and symbols on the use of face mask around the campus	10	40
2	Putting monitoring committee in place to enforce the use of face mask	02	08
3	Creating awareness of COVID-19	08	16
4	No action taken to enforce the use of face mask	04	08
5	Use of security personnel to enforce the use of face mask	01	02
	Use of Hand Sanitizer		
6	Distribution of free hand sanitizers	01	04
7	Provision of hand sanitizers at strategic places	16	64
8	Encouraging staff/students to sanitize their hands	05	20
9	No action taken to enforce the use of hand sanitizers	03	15
	Regular Hand Wash		
10	Provision of hand washing equipment with soap and water	20	80
11	Hand washing equipment in place but no longer in use	05	20
	Environmental Decontamination		
12	Regular decontamination of the environment	01	04
13	Irregular decontamination of the environment	10	40
14	No effort to decontaminate the environment	14	56
	Preventing the Sick from coming to School		
15	Sick persons are referred to the health center	01	04
16	Sick persons are advised to stay back	20	80
17	Some persons were on the watch for signs and symptoms of COVID-19	04	16

	Social Distancing		
18	There was a change in the arrangement of seats to ensure social distancing	02	08
19	Reduction in carrying capacity of lecture room/hall	10	40
20	Split of large class	03	12
21	No action taken to enforce social distancing	10	40

Table 1 shows that for the “Use of Face Mask” majority 10 (40%) of the respondents ensured placing educative signs and symbols on the use of face mask around the campus. On the “Use of Hand Sanitizers”, making provision for sanitizers at strategic places 16 (64%) was predominant. While for “Regular Hand Wash” the most used quality control procedure at 20 (80%) was ensuring the provision of hand washing equipment with soap and water at strategic locations. In the case of “Environmental Decontamination” most respondents, 14 (56%), took no action in enforcing it. On “Preventing the sick from coming to school”, 20 (80%) ensured that sick persons were advised to stay away from school. As regards “Social Distancing”, 10 (40%) respondents said they ensured the reduction of carrying capacity of classrooms/lecture halls while another 10 (40%) respondents said no action was taken.

2. What is the level of compliance to the basic principles of COVID-19 prevention in the University of Benin?

Table 2: Level of Compliance to the basic principles of COVID-19 prevention in University of Benin

S/N	How often do you comply with:	N	Mean	Std. Dev.	Mean %	Remarks
1	Use of face masks	405	2.57	0.88	64.25	High
2	No face mask no entry in class	405	2.49	0.96	62.25	High
3	No face mask no entry into office	405	2.57	1.04	64.25	High
4	Hand washing	405	2.01	1.01	50.25	Moderate
5	Use of hand sanitizers	405	2.06	0.97	51.50	Moderate
6	Ensuring that hands are sanitized	405	1.86	1.00	46.50	Low
7	Cleaning of classroom/office daily	405	2.83	1.03	70.75	High
8	Disinfecting classroom/office daily	405	2.05	1.05	51.25	Moderate
9	Disinfecting hostel daily	405	2.22	1.09	55.50	Moderate
10	Stay at home when you feel sick	405	2.47	1.04	61.75	High
11	Advised to stay at home when sick	405	2.37	1.11	59.25	Moderate
12	Temperature check before entering the faculty	405	1.42	0.82	35.50	Low
13	Maintain social distancing among classmates/colleagues	405	1.91	0.96	47.75	Low
14	Attending/Conducting online class	405	1.94	1.00	48.50	Low
15	Split of large class into smaller groups	405	2.11	1.03	52.75	Moderate
	Total Compliance	**405**	**2.19**	**0.99**	**54.75**	**Moderate**

Table 2 contains responses on the level of compliance to the basic principles of COVID-19 prevention in the University of Benin. From the table, the highest compliance level was seen in item 7 “Cleaning of classroom/office daily” at 70.75% while the least was “Temperature check before entering the faculty” as indicated by their mean percent 35.50%in item 13. Thus, the total level of compliance to the basic

principles of COVID-19 prevention in the University of Benin at 54.75% indicate a moderately high level of compliance to the basic principles of COVID-19 prevention in University of Benin.

Discussion of Findings

The study assessed the quality control procedures put in place to ensure compliance to the basic principles of COVID-19 prevention protocols as recommended by the World Health Organisation (WHO) in University of Benin. It also sought to found out the level of compliance of staff and students to the protocols in the University. The result of the study revealed that 'The Use of Face Mask', one of the COVID-19 prevention protocol, which involves enlightening members within and outside the university community by putting signs and symbols at strategic locations is the most effective quality control procedure put in place in the University. This confirms Katzev and Brownstein (1989)'s study on the significant effect of information on effectiveness of a process. The 'No Face Mask, No Entry' signs could be seen in major entrances in the university. Significantly, the results for the COVID-19 prevention protocols on 'Use of Hand Sanitizers' and 'Regular Hand Wash', as regards making provisions for facilities which recorded high respondents 16(64%) and 20(80%) respectively, is a further attestation of the World Bank (2020)'s report that millions of people are heeding the advice of health experts to wash their hands as one of the most effective ways to prevent transmission of the disease. However, the results of the study showed poor compliance due to lack of enforcement of the protocols. This finding corroborated the study of Odii (2021) on the declining adherence to COVID-19 guidelines in Nigeria universities.

The revelation of a moderately high level of compliance o the basic principles of COVID-19 prevention in University of Benin, further stresses the importance of compliance management. Since the protocols are in place, a very high level of compliance would have been expected. Thus, implying that it is not enough to set rules and regulations, there must be efforts at enforcing compliance. This is in tandem with Benedek (2015)'s assertion that, as a relevant approach in the strictly regulated education sector compliance management supports school operations ranging from admission to quality control

by focusing on compliance to laws and regulations. Generally, enforcement efforts have dwindled as people no longer believe in the existence of the disease. This lack of enforcement has also affected the level of compliance to the basic principles of COVID-19 prevention in the University of Benin.

Conclusion

Based on the research findings of the study, it was concluded that though the basic principles of COVID-19 prevention protocols were in place in the University of Benin, quality control procedures to ensure compliance was generally poor due to lack of enforcement. This poor enforcement of compliance to the protocols led to the moderate level of compliance recorded.

Implication for Educational Administration

It is not enough to have facilities in place, without measures to ensure that they are effectively utilized nor set rules and regulations without enforcing compliance.

Recommendations

1. As a result of the poor compliance revealed in the study, quality control procedures that will ensure compliance to set rules should be put in place by the school administrators to ensure effectiveness of the process.
2. School administrators must strengthen their monitoring activities for effective implementation and compliance to educational policies, rules or regulations.

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HUMAN RESOURCE MANAGEMENT PRACTICES AND ADMINISTRATIVE STAFF SERVICE DELIVERY IN UNIVERSITY OF IBADAN, IBADAN, NIGERIA

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Abstract
The study investigated the influence of human resource management practices on administrative staff service delivery in the University of Ibadan, Oyo state, Nigeria. It adopted survey research design. One null hypothesis was formulated and tested at 0.05 level of significance. The instrument used for data collection was 'Human Resource Management Practices and Service Delivery of Administrative Staff Questionnaire (HRMPASQ)'. The sample of 199 (46 core administrator and 153 executives was made through proportionate to size sampling technique. However, 171 (89.5%) questionnaires were returned. Data obtained was analysed using descriptive and inferential statistics. The study findings showed that staff induction (r = 0.430), compensation management (r = 0.169), promotion (r = 0.410) and staff discipline (r = 0.290) were significantly related to staff service delivery in the university. The study concluded that the success of an institution to a large extent depends on the human resource management practices institutions of higher learning. The study recommended that human resource management practices should be prioritized if the organization aims at increasing its general performance. Also, institutions should continue to give necessary attention to orientation training for newly employed staff to facilitate quality service delivery.

Keywords: Human resource**,** organisational policy, staff welfare, service delivery

Introduction

University education is the peak of formal education all over the world. The hope and aspiration of any country to develop through education largely depends on quality of higher education and university education in particular. Universities are key in championing lifelong learning. Thus, to operate successfully, they need quality and well-motivated administrative staff to provide professional back-up to the dons (Strajeri, 2009).

The role of staff service delivery in the attainment of organization goals and objectives cannot be underplayed. This is because the expected quality of performance of staff within an organization must be in accordance with the aims and objectives of the organization. El-Rufai (2013) sees service delivery as the degree of an organization and/or employee's performance, output and productivity, as he\she discharges responsibilities within the available time, money and other resources, towards the achievement of overall organizational goal.

Administrative staff service delivery in Nigerian universities can be described as the quality of performance expected of an administrative staff within the university system. It is the efficiency and effectiveness in performance of their functions of implementing policies, keeping records, making pertinent decisions, and all geared towards the achievement of the visions and missions of their universities. The relevance of administrative staff in organizations is indispensable, especially in the university system where human resources expected to coordinate nearly all sectors in the nation are trained. This category of staff could be regarded as key resources that both academic staff and students have to interact in order to meet the goals of university education. However, staff delivery of tasks in higher institutions constitutes a great challenge to the other bodies (students, academic staff and university management). It can be argued that the overall job role of the administrative staff in any university regardless of context is to ensure effective and efficient service delivery to the students and other stakeholders

Today, businesses and organizations have appreciated the need for quality service delivery globally. Service delivery has several meanings depending on the context in which it is used. In the words

of Zeithaml and Bitner, (2000), services can be defined as deeds, processes and or performance. Service delivery is getting services as effectively and quickly as possible to the intended recipient. An organization will be ranked excellent if the service is done fast.. Katamei & Kiprop, (2015) mentioned that quality service is increasingly becoming a pervasive strategic force and a key strategic issue in any organization. Increasing competition among universities to attract highly qualified students and staff toward achieving high academic profiles is forcing them to pay more attention to service quality issues (Green, 2014).

There have been complaints on the need for quality service delivery in organizations as it has been identified to be of utmost importance to the success of organizations. In South Africa, most of the times the Government is criticized by the public for being bureaucratic, slow, inefficient and ineffective in responding to services. Zubane (2011) continues to say that this dissatisfaction in service delivery has led to protests by the public that are characterized by violence, destruction and even loss of life. The main reasons that were cited for the protests in South Africa in 2010 include poor service delivery in water, sanitation, electricity, refuse removal among others (Zubane, 2011). This has made many municipal governments in South Africa to get more involved in customer satisfaction surveys in order to improve their service delivery

Being well informed that the roles of administrative staff are crucial to the university progress and as well imperative to complement efforts of academic staff in the university system. They are engaged in the daily activities of administering, interpreting and implementing institutional policies. They are also engaged in the roles of keeping records, giving and storing information, maintaining active and neat environment to enhance effective administration, but in the face of flaws in service delivery, to what extent will the university achieve the purpose for which it has been established? Hence, adequate attention needs to be given to administrative staff like other stakeholders if effective service delivery is to be achieved in the University.

A study by Lockhart and Taitoko (2005) examined causes surrounding poor service delivery of some organizations, which they

attributed to failure in proper management and other factors in the organization's (stakeholders) interests. Management in the civil society organizations involves both the provision of leadership and governance which determines both the efficiency and effectiveness of service delivery.

Griffin (2007) opined that service delivery among staff is one type of work performance. In this study, administrative staff service delivery will be limited to the level of staff performance. This is because the level of performance in service is usually viewed as the determinant of effective service delivery. Effective service delivery is the availability and accessibility of services to the population (students and staff) when required. The concept that access should be on the basis of need is supported by international humanitarian (Howard, Sondorp & Ter 2012). The availability of these services are components of service delivery which include punctuality, personal integrity and attitude to work.

Punctuality refers to employee's presence and attendance to work regularly and arrival at expected time. It ensures employees attend office daily and also complete their working hours. Punctual employees seldom take leaves and are assets to an organization. Employees who take leaves after every alternate day are mere burdens on the system and do not contribute much to the overall productivity of the organization.

Integrity is an act of being honest and showing a consistent and uncompromising adherence to strong moral and ethical principles and values of the organization. Personal integrity refers to employee's honesty, truthfulness and accuracy in actions which can stand as an opposition to hypocrisy against work values.

Work attitude is a set of evaluation of one's job that constitute one's feelings toward, beliefs about, and attachment to one's job. Overall work attitude can be conceptualized in two ways, either as affective job satisfaction that constitutes a general or global subjective feeling about work or as a composite of objective cognitive assessments of specific job facets, such as pay, conditions, opportunities and other aspects of a particular job. Employees evaluate their advancement opportunities by observing their job, their occupation, and their employer. Attitude according to Suleiman,

(2013) refers to an individual way of thinking, acting and behaving which has serious effect on work in organizations. Guerreror and Sire (2000) submitted that if workers have negative attitude towards work, the consequence can create problem in performing roles as expected and the productivity may be low.

In this regard, Jekayinfa (2013) asserted that unconcerned attitude among Nigerian higher institution workers has raised concern among many stakeholders. Some of these administrative staff who ought to be at work by 8am in the morning sometimes don't show up until 9am and some do not show up at all, this unpunctual attitude among administrative staff poses delay in carrying out their duties as expected of them. This assertion is considered a sensitive area to be addressed if good and effective service delivery is to be maintained in our institutions. Thus, this question is posed by this study, are administrative staff in the University of Ibadan effective in providing quality service that meets the satisfaction and expectations of the students and other stakeholders?

The implication of persistent occurrence of low service delivery among administrative staff in universities is that work progress is slowed down and these affects the universities negatively. Universities are made up of different units (academic staff, students and other non-academic staff) where activities of each (unit) affect the whole. Also, the achievement of the wholistic goal of education is affected if service delivery is poor on the part of the administrative staff.

Administrative staff in universities, are categorized into senior staff and junior staff based on the the university's policy. In the University of Ibadan, administrative staff are categorized into executive officers and core administrative officers. Likewise, workers at each cadre are recognized with different roles with the motive of working towards same goal in the institution. Concisely, senior staff seems to be given higher work roles in terms of attending special meetings than those at lower levels. However, the level at which each category of staff delivers their work might not generally be on the same pace which could be due to differences in workers' attitudes, recognition or respect that is attached to their job cadres. This may likely determine their level of performance and delivery of service.

There have been efforts by previous studies on service delivery through the use of variables such as; organizational culture, principles, beliefs, leadership/ subordinate styles and so on to get high level performance from staff (Vathsala, 2007, Zubane 2011 and Audu 2015), these efforts seem appeared not to have yielded effective result. Therefore, this brings a need for human resource managers to seek for appropriate tactics or solution which could be applied in order to deal with challenges faced by administrators with the aim of enhancing service delivery. From observations made on previous studies, there seems to be dearth research review on human resource management practices with combined influence of organizational policies to address service delivery of staff. This is a challenge to scholars in the field of education, in this regard, human resource management and organizational policies are considered to be significant in addressing service delivery of administrative staff of the University of Ibadan.

Human resource management practices could go a long way in enhancing administrative staff service delivery. Human resources refer to the set of individuals who make up the workforce of an organization. Human resource management practices are administrative activities associated with human resources, planning, recruitment, orientation, training, compensation, appraisal, motivation and also functions within an organization that focuses on people (Wikipedia, 2012). In this study, human resource management practices will focus on activities designed to provide for and co-ordinate all human elements within the organization, which include induction, compensation, performance appraisal, training, promotion, discipline and staff welfare. The human resource manager helps in bringing out the best in employees, so they can take better actions and decisions

Osakwe (2015) stated that in order to carry out management functions and to achieve the nation's tertiary institutions' educational goals and objectives, human resource managers or authorities should employ administrative strategies which will be used to manage human resources. Induction as one of the human resource management practices is described as a form of employee training designed to introduce new employees to their roles and responsibilities, co-

workers and the organization (Klein and Weaver, 2000). In consonance with this view, (Werner and Randy, 2009) sees induction as a process of familiarizing new employees with the organization and the job, it is part of the socialization process for new employees in organizations. Induction as a human resource management practice in this study is set to identify if it influences service delivery of administrative staff in the university.

Compensation as a human resource management practice forms an integral part which helps in motivating the employees and improving organizational effectiveness. The impact of compensation on employee performance and organizational effectiveness depends on the existing compensation management program in a particular institution or organization (Bob, 2011). Brown (2003) views compensation as a return in exchange between employees and the organization as an entitlement or as a reward for a job well done. Typically, most staff respond to benefits and pay with a positive and more productive attitude. The best people are often drawn to organizations that pay the most and offer them the best opportunity for advancement. Also, we have people in this same workforce who stay motivated regardless of the compensation package provided to them. On the other hand, there are employees who need constant increase in pay, more work-life balance and so on in order to perform well on a constant basis.

Performance appraisal is a process of assessing individual employee performance and how it can be improved to contribute to overall organization's performance (Grubb 2007). Aquinis (2007) also viewed performance appraisal as a continuous process through which performance of employees is identified, measured and improved in the organization, this process includes various practices like identification of employees' strengths and weaknesses, providing them regular feedback and offering career development. In relation to this, Anso (2014) attests that performance appraisal has emerged as a tool for enhancing organizational growth and professional development.

Training and development are considered to improve staff performance by enhancing the knowledge and skills of the employees. Due to the changing nature of the society, human resource managers

need to believe that total person development, or career development strategies can help staff increase performance or increase their delivery on the job. Atanda (2016) was of the opinion that school administrators (resource managers) should provide appropriate stimulation and encouragement to staff members so as to retain them on the job and at the same time, get them perform their tasks and duties to the maximum benefit of the organization. This can be achieved through training and development schemes, which comprises of seminars, workshops, conferences, on-the job training and off-the job training. Therefore, it is ideal to state that workers whose management makes periodic schedule for staff training and development of skills at various fields and levels, such are more likely to deliver effectively on the job and in particular, the university.

Promotion as a human resource management practice occurs when an employee is transferred from one position to another in a higher reward, responsibility and level in the organization (Mathis, Jackson and Valentine 2013). While Robbins and Judge (2013) state that job promotion will provide opportunities for personal growth, more responsibility, and increased social status. (Neck, Houghton and Murray 2018) posited that If job promotion is good, it provides satisfaction to employees. It may be said that staff whose management promote as at when due may perform their job effectively and deliver as appropriate.

Staff discipline is an attitude of respect, obedience or adherence by someone who has joined an organization with applicable regulations in the organization of both written and verbal with full awareness, that will create a stated order that shows the organization's goals will be reached when expected. This is in accordance with the opinion of Siswanto Satrohadiwiryo (2003) that "work discipline" is an attitude of respect and compliance to regulations by an employee, both written and unwritten and being able to run and do not swerve to accept sanctions if he/she violates his duties and authority given to him. Staff discipline will affect the efficiency and effectiveness of work in the organization. Where discipline cannot be enforced then it is likely predetermined organizational objectives may not be achieved efficiently and effectively.

Staff welfare is concerned with the total wellbeing of employees both in the school and at home (Armstrong, 2006). The term "school welfare" is explained to mean the provision of a minimal level of well-being and social support to staff (Bamusananire, 2007). Also, staff welfare is specifically defined as the health status and happiness, as well as safety of staff (Dale, 2006). In the same view, Jepkemoi (2014) identified that the provision of well-being to staff is a source of earning and satisfaction which is likely to increase their productivity because they are motivated and happy. Dessler (2008) supports this same view in his comment that organizations provide welfare facilities to their employees to keep their motivation levels high. When staff are motivated and satisfied through well designed welfare services, their performance increases.

Service delivery in terms of staff performance, punctuality, attendance to duty and attitude to work could be achieved through human resource management policies in Nigerian universities in order to improve and maintain administrative effectiveness and all-round institutional progress. On this note, this research investigated the relationship between human resource management practices and service delivery of administrative staff in the university of Ibadan.

Statement of the Problem

Recent studies have shown that service delivery of staff in any organization constitutes one of the issues that affect the success and development of such organization in which tertiary institutions, particularly universities are not left out. Administrative staff constitute human resources in an organization, they are characterized by different behaviour which may likely be difficult to deal with. Poor service delivery by many civil organizations across the world has triggered a global consciousness, with the aim to clear the problem.

The quality of service in universities is not encouraging, most administrative units in educational institutions are consistently confronted with issues of service delivery which manifest amongst staff in terms of level of performance, experience, general ability, responsibility and disposition or attitude to work. Moreover, the continuous existences of these issues have affected the standard of the university system where the quality delivery of institutional

programs and accountability cannot be distinctively guaranteed. Therefore, this study investigated relationship between human resource management practices and administrative staff service delivery in the University of Ibadan

Hypothesis

The following hypothesis was tested at 0.05 level of significance.

Ho: There is no significant relationship between human (human resource practices) staff induction/ orientation, compensation management, staff training and development, performance appraisal system, staff promotion, Staff discipline, employee healthcare and welfare on service delivery of administrative staff in the University of Ibadan.

Methodology

The study adopted descriptive research survey design because none of the variables was manipulated.

The population consisted of all 398 administrative staff of the University of Ibadan, Ibadan, Nigeria. There are two categories of administrative staff, the core staff were 91 while executive officers 307 (Human resource and development unit, University of Ibadan, 2021). The sample for the study was selected using stratified sampling technique. The sample was categorized under different strata. Each stratum was then subjected to simple random sampling technique. The sampling technique was chosen because it gave all the staff an equal chance to be selected. This technique enabled the researcher to randomly select respondents (administrative staff) 50% of the total. This gave a total of 199 (46 core administrator and 153 executives).

The instrument used for data collection was Human Resource Management Practices and Service Delivery of Administrative Staff Questionnaire (HRMPASQ). It was subdivided into three subsections which covered the respondent's demographic background, human resource practices and service delivery. The reliability of the questionnaire was ensured through test re-test. The research instrument was administered at interval of two weeks. Pearson Product Moment Correlation (PPMC) statistical tool was used to

determine the reliability coefficient of the instrument. The reliability coefficient was (r= 0.675).

The data collected were analysed using Pearson Product Moment Correlation (PPMC) statistical tool.

Results

HO: There is no significant relationship between human (human resource practices) staff induction/ orientation, compensation management, staff training and development, performance appraisal system, staff promotion, Staff discipline, employee healthcare and welfare on service delivery of administrative staff in the University of Ibadan.

Table 1: Correlation between Human Resource Practices

		IN	COM	SD	STD	SP	SSD
IN	Pearson Correlation	1	.369**	.116	.437**	.279**	.430**
	Sig. (2-tailed)		.000	.132	.000	.000	.000
COM	Pearson Correlation	.369**	1	.195*	.386**	.198**	.169*
	Sig. (2-tailed)	.000		.011	.000	.009	.027
SD	Pearson Correlation	.116	.195*	1	.061	.587**	.290**
	Sig. (2-tailed)	.132	.011		.429	.000	.000
STD	Pearson Correlation	.437**	.386**	.061	1	.236**	.211**
	Sig. (2-tailed)	.000	.000	.429		.002	.006
SP	Pearson Correlation	.279**	.198**	.587**	.236**	1	.400**
	Sig. (2-tailed)	.000	.009	.000	.002		.000
SSD	Pearson Correlation	.430**	.169*	.290**	.211**	.400**	1
	Sig. (2-tailed)	.000	.027	.000	.006	.000	
	N	171	171	171	171	171	171

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

*. Correlation is significant at the 0.05 level (2-tailed).

IN = Induction, COM = Compensation, SD= Staff discipline, SP = Staff Promotion

STD = Staff training and developemnt, SSD = Staff service delivery

Discussion

The findings on the relationship between staff induction/orientation service delivery of administrative staff supports the results of Nandi (2015), who submitted that the effectiveness of an induction program and employee performance is strongly related (r=.727) an increase effectiveness of induction program causes an increase in the performance of the employees. This is also in line with the findings of Akdere and Schmidt (2008), who stated that new employee orientation is a good way for organizations to start teaching new employees about quality-related organizational philosophies and initiatives. It ensures that all employees start out on the same page, receive the same messages from the organization regarding these topics, and increases their performance.

Also, the finding on compensation management and service delivery agrees with the study of Abdul-Hameed (2014) who submitted that salary, rewards, indirect compensation, and employee performance show agreeableness which means that all the independent variables will increase the employee performance. The findings of this hypothesis also support the findings of Omuya (2018) who concluded that compensation and reward significantly influenced employee performance in public universities in Kenya. Model coefficients were established to help fit a linear equation on the relationship between employee compensation and employee performance.

The finding of this study on staff training and development and service delivery did not differ from Ogbu and Osanaiye (2017) who concluded that on-the-job training has significant relationship with employee productivities. Also, this finding concurred with that of Shahazadi and Naveed (2016) who revealed that training has positive relationship impact on performance. This result is however not in line with the findings of Olumese and Udom (2018) who concluded that Training Programmes does not significantly influence the Productivity of staff of the Central Administration of the University of Benin, Benin City and Benson Idahosa University, Benin City, Nigeria.

In addition, the finding of this study on staff promotion and service delivery supports the findings of Siswoyo, Supardi, and Udin (2020) who submitted that promotion has a positive and significant effect on job performance. The finding also supports previous research conducted by Imam et al. (2019), Saharuddin and Sulaiman (2016), which show that the promotion has a positive and significant effect on employee job performance. The inference is that job promotion can make better employees' performance.

The revelation of this study that staff discipline significantly related to service delivery concurs with research Satria and Nio (2019) about the relationship of work discipline with the performance of the employees of PDAM Tirta Jam Gadang Bukittinggi. The work discipline indicator measured in the study is attendance, adherence to employment, adherence to working standards, high level of vigilance, and ethical work indicating a significant positive relationship between working discipline and performance in the employees of PDAM Tirta Jam Gadang, Bukittinggi City. However, this result does not concur with the result of Edy Slamet (2020) whose finding indicates that there is no relationship between working discipline and employee performance at the Tanimbar Islands District Health Office.

Significant relationship discovered between employee welfare and service delivery affirms the earlier submission of Fadeyi, Sofoluwe and Gbadeyan (2016), who concluded that the provision of welfare scheme to teachers has a great influence on their job performance? Also, Naluwemba, Sekiwu, and Okwenje (2016) ascertained that school welfare provision will positively influence teacher performance if teachers are reciprocally committed to work while at the same time administrators meet teachers varied needs. This result agrees with the findings of Owolabi, Ajidagba, Falaye, and Irinyemi (2016) who concluded that health insurance influence employee's productivity. The following linear equation showing the relationship between employee healthcare and welfare services and administrative staff service delivery was generated.

Conclusion

It has been proven from correlation analysis that all the independent variables have positive relationship with staff service delivery.

Therefore, based on the findings, the study submitted that the human resource management practices such as: induction, compensation management, staff discipline, staff promotion and staff training and development is significantly related to administrative staff service delivery in the university of Ibadan. Hence, the results of the study concluded that the human resource management practices reviewed, such as: induction, compensation management, staff discipline, staff promotion and staff training and development are paramount to organizational outcomes in the university of Ibadan.

Recommendations

In the light of the findings and conclusion drawn, the study recommends that:

- Human resource management practices should be prioritized if the organization aims at increasing its general performance. Institutions should continue to address quality in new employee orientation training
- Also, induction programmes should be reviewed and improved upon from time to time and to determine if the induction programme has any effect on the employees' values and attitudes. Irrespective of the approach used, induction policies should ensure fairness to all employees and should help boost employee morale.
- The respondents agreed to a large extent that aside monetary compensation, non-monetary benefits will increase staff morale to perform better, thus, management should have performance-based compensation plans/ program at every level of the organization. Institutions should ensure that staff are recognized for excellent performances from time to time. The University of Ibadan and other universities should continue to have non-monetary benefits included in their compensation schemes.
- The University of Ibadan, and other universities should provide regular feedback and offer career development, this will enable its staff to identify areas of strengths and weaknesses. Training, seminars, workshop, and programs should be organized for staff to help them work effectively.

- The respondents indicated that Staff discipline is paramount to guide against employee misconduct in the university, therefore, discipline of work should also be considered as the supervision of a staff in the execution of tasks assigned in accordance with the rules of the employees.
- Also, the University of Ibadan and other universities should continue to carry out promotion and motivation practices from time to time

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TRAINING OF PRE-SERVICE TEACHERS ON TWO MODES OF INSTRUCTION ON ACQUISITION OF LESSON PLANNING SKILLS IN THE NEW NORMAL

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Abstract

The main objective of teaching Integrated Science in Nigeria Colleges of Education is to produce professional teachers with scientific and technological knowledge and skills. However, studies have shown that, pre-service teachers were deficient in Lesson Planning Skill. Previous studies concentrated more on student-related factors than Buzz session and Adaptive learning environment strategies. The present research determined the effects of Buzz Session Strategy (BSS) and Adaptive Learning Environment Strategy on pre-service skills. The moderating effects of mode of entry were also examined. The research design employed for the study was the pretest-posttest control group quasi-experimental design. Three Colleges of Education were randomly selected. Intact classes of Part two of pre-service Integrated science teachers were used. The participants in the Colleges of Education were randomly assigned to Buzz Session Strategy (120), Adaptive Learning Environment Strategy (126) and control (112) groups. The instruments used were lesson Planning Skills (0.88) scale and instructional guides. Analysis of covariance and Scheffe's Post-hoc test at 0.05 level of significance were used to analyse data. The age range was 23.65±1.20 years, and 65.0% were admitted through direct entry. Treatment had a significant main effect on Lesson Planning Skills ($F_{(2; 355)} = 710.63$; partial $\eta^2 = 0.81$). The

BSS group had the highest mean score (67.41), followed by ALES (49.59) and control (31.20) groups. Buzz session and adaptive learning environment strategies improved Lesson planning skill of pre-service integrated science teachers in southwestern Nigeria, particularly among students. These strategies should be adopted in the course o preparation of pre-service to teachers' preparation.

Keywords: Buzz session strategy, Adaptive learning environment strategy, Lesson planning skill, Pre-service teachers in southwestern Nigeria

Introduction

Science involves the systematic study of the natural phenomena, which allows students to have first-hand experience of the rich and exciting natural world as they engage in inquiry, critical thinking and demonstration of skills.

The purpose of science is to transform the environment towards improving the general quality of life, thus making the world a better place in which to live. Science is primarily concerned with the intellectualization of facts and values in an unbiased manner (Ugwu, 2014). The overall objectives of this curriculum are to enable the learners to do the following:

- **i.** Develop an interest in science and technology:
- **ii.** Acquire basic knowledge and skills in science and technology;
- **iii.** Apply their scientific and technological knowledge and skills to meet societal needs;
- **iv.** Take advantages of the numerous career opportunities offered by science and technology;
- **v.** Become prepared for further studies in science and technology (FME, 2012).

Integrated Science study started in Nigerian Colleges of Education in 1990/1991 session as Integrated Science. The curriculum provides for single and double major courses for the pre-service teachers. The single major programme enables the pre-service teacher to offer Integrated Science courses in addition to another single subject (FRN, 2012). Today, Integrated Science is offered in all colleges of education

in Nigeria. The programme has helped in producing manpower for the teaching of basic science at the primary and junior secondary school levels of education.

Over the past decade a number of Pre-service training have been conducted to upgrade and evaluate integrated science education. Toshalis (2010) examined how pre-service teachers have experienced their training by their facilitators and how that training is reproduced in their relationship with students. The participants were found to be obsessed with good pedagogy, which compels them to fixate on discouraging misbehaviour instead of promoting teaching. The poor performance of the pre-service teacher in integrated science education course as prerequisite for their teaching practice exercise call for concern by all stakeholders in education. Various reasons had been adduced for this ranging from lack of interest and attitudes of students, lecturers mode of teaching and government instability in providing necessary materials for education and lecturer stick to old conventional method of teaching (lecture method) which many researchers had been complaining about that the method did not yield better achievement in pre-service teacher education. Abimbola and Abidoye, (2013) agreed that teacher centred method of teaching science predominates in Nigeria. Ogundiwin and Ahmed (2015) expressed their opinion that the conventional method of teaching is inadequate for effective learning of science.

Lesson Planning Skills as defined by Sahin-Taskin (2017) is a crucial skill gained during the pre-service teachers' training which is needed by them to organize their activities, construct their goals and get feedback from their learners. Without an effective lesson, planning a pre-service teacher cannot be effective. Because planning for a lesson is crucial, as it will affect what the teacher does in the classroom. A teacher that prepares for the lesson will be effective in the teaching and learning process. A lesson plan is crucial as it helps teachers design a framework to carry their students to a certain destination (Vdovina and Gaibisso, 2013). Lesson plan has to do with goals, knowledge, and sequencing which involves activity procedure, implantation and Assessment (Jacobs, Martin and Otieno, 2008). Lesson planning is a connection requirement between the curriculum

and the textbook and what is presented in the classroom (Li, Chen and Khum, 2009).

Tashevska (2008) reviewed literature and revealed that pre-service teachers found planning of their lessons difficult. Which means that lesson planning skills can be difficult to a teacher that is novice which will prepare the lesson from textbooks or from browsing from the internet. Also, Senior (2006) after searching through literature concluded that pre-service teachers' or novice teachers spent most of their time planning lessons and found the planning process to be difficult as most of the materials that is needed could not be readily available for the novice teachers to peruse, therefore taking them time to prepare a lesson.

Tables: 1-5 below shows the statistical data on achievement of pre-service teachers in ISC 212 (Science Education) from five colleges of education in Nigeria from 2012/2013 session to 2015/2016 session.

Table 1: Pre-service Teachers Achievement in Science Education (ISC 212) in Federal College Education, Osiele.

Year	No examined	No of candidate with A-C	% Pass of candidate with A-C	No of candidates with D-E	% of candidates with D-E	No of candidate failed	% failed
2013	75	21	28.0	53	70.7	1	1.3
2014	64	32	50.0	31	48.4	1	1.6
2015	69	26	37.7	41	59.4	2	2.9
2016	68	27	39.7	39	57.4	2	2.9

(Source: NCE RESULT FROM COLLEGE OF EDUCATION 2016)

Table 2: Pre-service Teachers achievement in Science Education (ISC 212) in Federal College of Education (Tech), Akoka

Year	No examined	No of candidate with A-C	% Pass of candidate with A-C	No of candidates with D-E	% of candidates with D-E	No of candidate failed	% failed
2013	53	11	20.8	41	77.4	3	1.8
2014	58	24	41.4	28	48.3	6	10.3
2015	55	19	34.5	34	61.8	2	3.7
2016	42	16	38.1	24	57.1	2	4.8

(Source: NCE RESULT

Table 3: Pre-service Teachers achievement in Science Education (ISC 212) in Tai Solarin College of Education, Ijebu Ode.

Year	No examined	No of candidate with A-C	% Pass of candidate with A-C	No of candidates with D-E	% of candidates with D-E	No of candidate failed	% failed
2013	58	13	22.4	43	74.1	2	3.5
2014	54	25	46.3	28	51.9	1	1.8
2015	61	23	37.7	37	60.7	1	1.6
2016	64	22	34.4	41	64.1	1	1.5

(Source: NCE RESULT FROM COLLEGE OF EDUCATION 2016)

Table 4: Pre-service Teachers achievement in Science Education (ISC 212) in Ekiti State College of Education, Ikere Ekiti.

Year	No examined	No of candidate with A-C	% Pass of candidate with A-C	No of candidates with D-E	% of candidates with D-E	No of candidate failed	% failed
2013	36	11	30.6	22	61.1	3	8.3
2014	42	15	35.7	23	54.8	4	9.5
2015	42	10	23.8	26	61.9	6	14.3
2016	46	31	67.4	13	28.3	2	4.3

(Source: NCE RESULT FROM COLLEGE OF EDUCATION 2016)

Table 5: Pre-service Teachers achievement in Science Education (ISC 212) in Emmanuel Alayande College of Education, Oyo.

Year	No examined	No of candidate with A-C	% Pass of candidate with A-C	No of candidates with D-E	% of candidates with D-E	No of candidate failed	% failed
2013	61	11	18.0	47	77.1	3	4.9
2014	64	23	35.9	40	62.5	1	1.6
2015	70	34	48.6	33	47.1	3	4.3
2016	58	22	37.9	32	55.2	4	6.9

(Source: NCE RESULT FROM COLLEGE OF EDUCATION 2016)

Tables 1 to 5 shows the performance (Teaching Practice) of the pre-service teachers in Integrated Science Education, in five colleges of Education in Nigeria across five consecutive years (2013 to 2016). This poor performance of students in the examined Colleges of Education calls for an urgent attention. This performance exhibited by pre-service teachers was due to the fact that students' lesson planning skills are poor which ushers in the lesson planning skills of pre-service teachers in colleges of education.

The comments made by moderators during the teaching practice exercise included the following: The lesson plan took into account Pupils backgrounds such as needs/interests/ misconceptions, growth of and previous experience in relation to the topic, Introduction incorporated previous knowledge/skills/everyday experience and linked to the new topic, Making reference to previous lesson and everyday experience, Lesson encouraged Pupils to express their prior experiences and explain their ideas related to the content, Content is related to learners' previous experience, Teacher supervised class work, Teachers do not rephrased question of instructional statements, as necessary, Pupils were effectively encouraged to give their prior experiences and explain their ideas related to the content, Pupils were able to solve related problems, lesson objectives Stated in simple and clear language, Questions distributed evenly, Explained concepts clearly in appropriate simple and clear language, Lack explanation and elaboration of main

concept, Guide learners to summarize main point of lesson through carefully structured questions, Pupils encouraged to ask and answer questions, The teacher appears to be enjoying the teaching, Time is appropriately distributed: In the lesson plan and In the execution of the lesson, The teacher failed to ensure that learners were engaged in relevant learning activities, The teacher actively solicits the ideas of pupils on content being taught, Evaluation incorporated in the lesson plan.

In view of the above discussions and relevant information gathered, the performance of pre-service teachers in science education course (ISC212) and moderators comments/report on teaching practice exercise, which shows that pre-service teachers performance is poor, it is imperative that educators should find other productive and effective strategies, like the Buzz Session Teaching Strategy and the Adaptive Learning Environment Strategy (ALES).

Buzz session as a teaching strategy is projected as a powerful tool for creating more realistic, experiential learning environments and helping schools and universities meet the emerging demands for teacher training (Bell and Kozlowski, 2007). Buzz groups as a method was first used and developed by Dr Donald Phillips on his students' at Michigan State University. His class was divided into six students' clusters to discuss for six minutes about a certain concept. Soon this method was known as Phillips 66 technique. Buzz group teaching, like other forms of discussion, benefits from significant teaching principle, "interaction". Small groups buzz together and everyone is expected to contribute to a thought-provoking topic and if they speak in private, they are likely speaking afterwards in Public to the whole class. Buzzes can also tune students to a subject matter and wind up their ideas. Buzz groups session requires more preparation time to achieve a certain task, answer questions and set context for the lecture. It may be informed of images, data, multiple answer or over-head projector transparency. Moderate time is required probably a couple of hours including planning. The gain is the time spent in preparation and having less content material for the lecture. There is a major gain for the students learning and their confidence to converse with colleagues and lecturers.

The Adaptive Learning Environment Strategy (ALES): was designed by (Jones and Winne, 2018). Adaptive Learning Environments was expressed as meeting point between two traditionally distinct areas of research, these include Instructional science and Computer science. ALES cuts across intelligent tutoring systems, interactive learning environments, and situated learning environments. These came into board because of the increasing interest in effective instructional systems from education, industry. Adaptive Learning Environments are environments personalizing the instructional process on different instructional parameters as a sequence of tasks and task difficulty, time and type of feedback, the pace of learning speed, reinforcement plan and others. The objective of the Adaptive Learning Environments Strategy (ALES) is to establish and maintain school environments that ensure optimal learning success opportunities for most students through adaptive instruction. Modification of the environment to accommodate student differences has been an important design consideration in the development of the ALES. The programme design incorporates the use of interventions when necessary to modify a student's capability to function. These adaptive methods have been empirically evaluated and showed to increase learning speed and help students for better understanding through individualized instruction.

The mode of entry into higher institutions in Nigeria is categorized by the Joint Admission and Matriculation board (JAMB) now known as Unified Tertiary and Matriculation Examination (UTME) for the undergraduate education admission as the Unified Tertiary and Matriculation (UTME) admissions, Direct Entry admissions and those who pass through remedial programme being run by individual university (Emaikwu, 2012). All these groups have varying academic experiences which brings about the differences in their mode of entry in the institutions, which brings about the variations in the ordinary level qualification of the remedial programme students, ranging from no credit to four credit passes, which therefore means that the remedial students with three or four credit level passes at the ordinary level lacked experience of the higher institutions courses, the problem seem more complicated for the remedial students with no credit level at all. Hence this could reflect in their academic achievement when

admitted into the higher institution's programme (Emaikwu, 2012). For the admissions into this institution through direct entry programmes by using National Certificate in Education (NCE), National Diploma (ND) and Higher National Diploma (HND). One of the problems that is associated with the Direct entry Admissions is the Non-uniformity of the National Certificate in Education (NCE), National Diploma (ND) and Higher National Diploma (HND) holders, yet there are all admitted and considered as having the same experience during admission and for the placement in their different departments (Emaikwu, 2012). Furthermore, the National Universities Commission (NUC) in 1999 affirmed that many colleges of education carryout their activities outside the National Commission for Colleges of Education (NCCE) guidelines, which there led to variation in experiences among national certificate in education holders. Finally, since the direct entry candidates were certified internally to the extent that each college of education, polytechnic and college of Agriculture and so on, sets and conducts her own certificate examinations for her students; one could doubt the validity of such examinations (Emaikwu, 2012).

In respect to students admitted to the university irrespective of their mode of entry of being able to cope with the academic rigors is ironic because some students dropped out on their way without graduating from the university, also, many students admitted often change their courses while others often spend extra years before graduating, more so, some students end up graduating with third class and pass degrees from many universities in Nigeria thereby complicating their chance of gainful employment. Conflicting findings on the predictive strength of modes of entry in forecasting performance in university examinations are seen by Mgbake (2006) who was of the opinion that student's academic success is more or less a function of the amount of efforts sunk into study and not necessarily as a result of the mode of entry into the universities.

Statement of the Problem

Based on the deficiencies on the issues regarding the pr-service lesson planning skills , it shows that pre-service teachers' low level of performance in Integrated Science is attributed to lack of adequate necessary skills of lesson planning which has been an issue attracting

the attention of researchers and science educators. Based on literature reviewed, most pre-service teachers have the problem of lesson planning skills. This is crucial for a subject as important as Integrated Science and effective delivery of Integrated Science lesson in Nigeria Colleges of Education. Several factors have been adduced to be responsible for this trend. These include the instructional strategy used in teaching the subject at the NCE level which does not make a good level of lesson planning skills on the part of the pre-service teachers thereby affecting their learning outcome. Based on the results from the teaching practice reviewed, its shows that the performance was poor which led to why this study was carried out. However, the impact of the subject is not being felt as expected due to its poor handling by the lecturers' who adopted teacher – centred strategies in teaching Integrated Science. Earlier scholars experimented with ineffective learner-centred and participatory strategies for teaching Integrated Science in Colleges of Education but these have not translated to significant improvement in Lesson Planning skills of Pre-service teachers. Consequently, Integrated science was taught using conventional lecture strategy, hence there is the need to introduce Adaptive learning and Buzz session strategies to teach Lesson planning skills to Pre-service teachers in Integrated science taking note of mode of entry into the colleges of Education. This study, therefore was concerned was training of pre-service teachers on two modes of instruction on acquisition of lesson planning skills in the new normal basic science in southwest Nigeria

Purpose of the Study

This study aimed on training of pre-service teachers on two modes of instruction on acquisition of lesson planning skills in the new normal basic science in southwest Nigeria .Specifically, the objectives of the study are to:

1. Determine the main Effects of Adaptive learning and Buzz session strategies on pre-service teachers' Lesson Planning Skills in Integrated Science in colleges of Education Southwest Nigeria

2. Determine the main Effects of mode of entry on Pre-service teachers' Lesson Planning Skills in Integrated Science in colleges of Education Southwest Nigeria

Hypotheses

The following null hypotheses were generated and was tested in the course of this research at 0.05 level of significance:

Ho1: There is no significant main effect of treatment on pre-service teachers' Lesson Planning Skills in Integrated Science

Ho2: There is no significant main effect of mode of entry on Pre-service teachers' Lesson Planning Skills in Integrated Science.

Methodology

Research Design

The study employed the pretest, posttest, control group, quasi-experimental design. It included instructional strategies at three levels, and mode of entry also at two levels.

Independent variables

This is the instructional strategy manipulated at three levels:

i. Buzz Session Teaching Strategy
ii. Adaptive learning Environment Strategy
iii. Conventional Instructional Strategy

Moderator Variables

These are:

(a) Mode of Entry at two levels (UTME and Pre-NCE).

Dependent Variable

This is the Lesson Planning Skills

Population and Sample Selection

Selection of Participants

The participants for this study were taken from N.C.E II Pre-service teachers studying Integrated Science in three colleges of education

Southwestern Nigeria which were randomly selected. The colleges were randomly assigned to treatment and the control group. One college was exposed to buzz session instruction and another one to Adaptive Learning Environment Instruction and the remaining one to the Conventional Teaching. From the selected colleges, intact classes of N.C.E II Integrated Science were used for the study.

Selection of Contents

The content selected are some concepts of Integrated Science Education course code ISC 212 titled Science Education II as contained in the NCE course outline and adapted from the NCCE minimum standard and taught at NCE II level at colleges of education in Nigeria.

Research Instruments

The instruments used in this study include:

1. Pre-service Teachers Lesson Planning Skills Scale (PTLPSS)
2. Pre-service Mode of Entry Demographic Scale (PMEDS)
3. Operational Guide for Buzz Session Teaching Strategy (OGBSTS)
4. Operational Guide for Adaptive Learning Environmental Strategy (OGALES)
5. Operational Guide for Conventional Instructional Strategy (OGCIS)
6. Evaluation Sheet for Assessing Teachers (ESAT)
    a. Evaluation Sheet for Assessing Buzz Session Teaching Strategy
    b. Evaluation Sheet for Assessing Adaptive Learning Environment Strategy
    c. Evaluation Sheet for Assessing Conventional Instructional Strategy

Pre-service Teachers Lesson Planning Skills Scale (PTLPSS)

The Pre-service Teachers Lesson Planning Skills Scale (PTLPSS) is divided into Section A which was collected personal information as well as the Mode of Entry into the college. Section B was based on a Likert scale of 1 = poor, 2 = Fair, 3 = Good, 4 = Very good, and 5 =

Excellent. This section was further divided into different sections and sub-sections and there are to check the following to get the Pre-service teachers' teaching technique, appropriateness of lesson, fundamental strategies and class management/control using the Likert scale to get the needed information.

Validation Reliability of Pre-service Teachers' Lesson Planning Skills (PTLPSS)

In order to validate the modified instrument, it was given to three experts in the Department of Science and Technology Education for their expert advice in respect to the language level, difficulty, suitability and over all face and content validity of the instrument. Corrections thereafter made based on their input. The instrument was also given to my supervisor who read through to make the final modifications. The instrument was then administered to 30 N.C.E II students who were not part of the main study. The reliability coefficient of the instrument was calculated by using Scott pie (π) interrater analysis and a reliability coefficient of 0.88 was achieved.

Pre-service Mode of Entry Demographic Scale (PMEDS)

The Pre-service Mode of Entry Demographic Scale (PMEDS) is a demographic scale that is added to the pre-service teachers' data in section A of all the instruments given to them. The scale is at two levels and there are PRELIM and DIRECT. This will be used to ascertain whether the pre-service performance, self-efficacy, teaching skills, lesson planning skills is as a result of the mode of entry into the colleges of education assessed.

Operational Guide for Buzz Session Teaching Strategy (OGBSTS)

Stages	Time	Activities
1.	5mins	**Review of Previous Work** Students' revised previous work done on the last topic while Lecturer: watches
2.	5mins	**Discussion in Groups** Students discuss the questions in small groups
3.	5mins	**Lecturer and students talk** Lecturer: short talk on set questions while the students answer the questions
4.	9mins	**Setting New Task (1)** Students: a new task is set employing data displayed on the screen
5.	6mins	**Lecturers Summary** Lecturer: summarizes using feedback from some student groups
6.	7mins	**Students Task (2)** Students: set a harder task interpreting and, working in pairs.
7.	11mins	**Lecturers Contribution** Lecturer: answers part of the question leading to a more advanced issue
8.	12mins	**Students Group Work** Students: continue to work in groups

Operational Guide for Adaptive Learning Environment Strategy (OGALES)

1 Introduction and review:

- Attract students' attention and activated their background knowledge through questions that reviewed prerequisite knowledge or skills;
- Students answered the questions

2 Presentation:

Students explained and illustrate the concept being taught;

3 Guided practice:

Students try out new concepts as the teacher carefully monitored their progress and Provides necessary support and feedback;

4 Independent practice:

Students practiced the new concept or skill on their own first in class, later on as a homework/ assignment.

Operational Guide for Conventional Instructional Strategy (OGCIS)

The lessons were based on normal ways of writing lesson note. The main feature of the guide is: general information, the procedure, the teacher, general objectives, content for each lesson, summary and conclusion. The steps involved include:

I. Lecturer introduces the lesson
II. Explanation of theoretical bases for the topic
III. Solution of the problem with examples and application
IV. Solicit for question from the class and give class work
V. Marking of students work

Validation of Conventional Instruction Strategy Assessment Scale (CISAS)

The instruments were trial tested to ensure its reliability. For the purpose of validation, experts' attention were drawn to ascertain the appropriateness of the concepts and methods to the target population. The observations and comments of these experts were taken into consideration while preparing the final draft. The reliability coefficient was obtained using Scott pie (π).

The reliability indices of 0.78, 0.79 and 0.79 were obtained for OGBSTTS, OGALES and OGCTS respectively.

Evaluation Sheet for Assessing Teachers Performance on the use of the Packages (ESAT).

The instruments were used to evaluate the performance of the trained teachers on the effective use of the 3 strategies.

1. Buzz session Teaching Strategy
2. Adaptive learning Environment Strategy
3. Conventional Instrumental Strategy

The rating scale consisted of two (2) sections

SECTION A: This consisted of the personal data of the trained teacher. The name, school, period, class taught, data and the summary of the concept discussed in the class.

SECTION B: This consisted of items to be evaluated. The items were placed on 5-point, Likert type rating scale, ranging from very good (5) Good (4) Average (3) Poor (2) Very poor (1)

Validation of ESAT

The instruments were trial tested to ensure reliability and validation. Experts' attention were drawn to ascertain the appropriateness of the concepts and topics treated in Basic science. The observation and comments of these experts were taken into consideration while preparing the final draft.

Research Procedure

Procedure for data collection were divided into three stages; pre-treatment stage, treatment stage and post-treatment stage as shown in the diagram below:

Pre-treatment Stage:

This stage lasted for three (3) weeks. It involved the pilot testing of the instrument, familiarization visits to the selected colleges for the formal introduction of the Researcher to the appropriate school heads with introductory letters that were obtained from the Department of Science and Technology Education, University of Ibadan, training of Basic science facilitators that guide the pre-service teachers during treatment and application of the pre-test instrument. Copies of the selected NCE II Integrated science time-tables would be obtained to enable the researcher to properly plan the data collection.

Training of Teachers/ Facilitators

The researcher took one week to train the facilitators in the experimental group on the use of Buzz session and Adaptive learning Environment Strategy in the teaching of Concepts in Basic science.

The facilitators were trained on how to guide the pre-service teachers in the use of these packages for the purpose of learning. The areas of difficulty were thoroughly explained and the facilitators' knowledge on the use of the packages were tested to ensure that the packages were effectively used for the purpose for which they were designed. The facilitators were assessed using the evaluation sheet. Facilitators that do not meet up with the standard required were re-trained to further eliminate the areas of disparity.

Pre-test

The researcher used a period of one (1) week as pre-test period in all the selected Colleges. Pre-test was carried out in both the experimental and control colleges using the stipulated instruments. Pre-service Teachers Lesson planning skills Scale (PTLPSS) on the individual pre-service teachers lesson plan written on selected concepts in Basic science.

Treatment Stage: This stage will be expected to last for a period of six (6) weeks in the first semester of the 2018/2019 academic year. The Buzz session will be administered to the experimental group I, while Adaptive learning Environment Strategy will be administered to the experimental group II and the conventional strategy will be used in the control group.

Posttest Stage:

This stage lasted for a period of one (1) week. The post-test instruments Pre-service Teachers Pedagogical knowledge Test (PTPKT) on Buzz session and Adaptive learning Environment Strategies were administered first followed by the Pre-service Teachers Lesson planning skills Scale(PTLPSS) on the individual pre-service teachers lesson plan written on selected concepts in Basic science were administered.

Procedure for Data Analysis

Data obtained will be analysed using statistics such as Analysis of Covariance (ANCOVA) and the Estimated Marginal Means (EMM). Where there is significant main effects, the Bonferroni Post-hoc

Analysis would be used to determine the sources of such significant differences.

Result

Ho1: There is no significant main effect of treatment on pre-service teachers 'Lesson Planning Skills in Integrated Science

Table 6: Summary of Analysis of Covariance (ANCOVA) Showing the Main Effect of Treatment on Lesson Planning Skills in Integrated Science

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	77701.164[a]	12	6475.097	140.397	.000	.830
Intercept	12306.926	1	12306.926	266.846	.000	.436
Pre lesson skill	.866	1	.866	.019	.891	.000
One Way Interaction	65548.075	2	32774.037	710.626	.000	.805
Treatment	87.262	1	87.262	1.892	.170	.005
Mode of entry	93612.550	345	46.120	5.383	.005	.030
Error		358				
Total		357				
Corrected Total						

a. R Squared = .830 (Adjusted R Squared = .824)

Table 6 shows that there was a significant main effect of treatment on pre-service teachers' lesson planning skills in Integrated Science ($F_{(2,345)}$= 710.626;P<0.05;η^2=0.81). The effect size accounted for 81%, therefore, the null hypothesis 1 was rejected. In order to determine the magnitude of significant main effect across the treatment groups, the estimated marginal means of the treatment groups is presented in Table 7

Table 7: Showing the Estimated Marginal Means Score of Pre-service teachers' Lesson Planning Skills in Integrated Science across all Treatment Groups

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Adaptive Instructional Strategy	49.585[a]	.686	48.236	50.933
Conventional Strategy	31.202[a]	.688	29.849	32.555
Buzz Instructional Strategy	67.414[a]	.666	66.105	68.723
Intercept				
Pre-score Knowledge	28.187	-		
Post-score knowledge	49.400	.392		

Table 7 shows that pre-service teachers exposed to Buzz instructional strategy had the highest mean score ($\bar{X}$ =67.41), followed by those in the Adaptive instructional strategy($\bar{X} = 49.59$), while those in the conventional strategy group had the lowest mean score($\bar{X} = 31.20$). The table also reveals that the general performance of pre-service teachers' lesson planning skills in Integrated Science at post-test ($\bar{X} = 49.40$) is higher than their performance at the pre-test score ($\bar{X} = 28.19$). The significance of this is that those in Buzz instructional strategy performed better than those in the Adaptive instructional strategy, while those in the Adaptive instructional strategy group performed better than those in the conventional strategy.

In order to determine the sources of significance, table 8 presents the pair wise comparisons of Scheffe' Post Hoc Analysis.

Table 8: Pair wise Comparisons of Scheffe' Post hoc Analysis on Pre-service Teachers Lesson planning Skills

Treatments	Adaptive Instructional Strategy	Buzz Instructional Strategy	Conventional Strategy
Adaptive Instructional Strategy		*	*
Buzz Instructional Strategy	*		*
Conventional Strategy	*	*	

*Note: * implies that there is a significant difference*

Table 8 shows that the significant main effect that was revealed by table 6 is a result of the significant difference between:

i. Adaptive Instructional Strategy and Buzz Instructional Strategy
ii. Adaptive Instructional Strategy and Conventional Strategy
iii. Buzz Instructional Strategy and Conventional Strategy

H_{o2}: There is no significant main effect of mode of entry on pre-service teachers 'Lesson Planning Skills in Integrated Science

Table 6 shows that there is no significant main effect of mode of entry on pre-service teachers' lesson planning skills in integrated science ($F_{(1,345)}$= 1.89;P>0.05;η^2=0.17).Therefore, hypothesis 2 was not rejected.

Discussion of Findings

Effect of Treatment on Pre-service Teachers' Lesson Planning Skills in Integrated Science

The result showed that there was a significant main effect of treatment on pre-service teachers' lesson planning skills in Integrated Science and the effect size accounted for 81%. The result is in agreement with Kablan (2012) who asserted that lesson plan preparation contributed

immensely towards teachers' instructional delivery and learning outcome.

Moreover, Sahin-Taskin (2017) study on exploring pre-service teachers' perceptions of lesson planning in primary education stated that planning a lesson is a complex process. The relationship between the quality of a lesson plan and an effective teaching-learning process is widely acknowledged by researchers and educators. Therefore, developing pre-service teachers' planning skills is considered key in raising effective teachers. This research found out pre-service teachers' perceptions of lesson and how they think their plans facilitate their creating an effective teaching-learning process. The sample involved primary pre-service teachers who enrolled in a Teaching Practice course at a Faculty of Education. 18 pre-service teachers participated in the research. Data was collected through semi-structured interviews. Content analysis was utilized to analyze the data. Two main categories emerged through the analysis and they have been named Difficulties of Planning a Lesson and Functions of Lesson Plans during the Teaching-Learning Process. The findings of the research revealed that primary pre-service teachers are aware of the importance of planning lessons. However, they found some difficulties during their planning. They claimed that during their visits to primary schools, they do not have enough time to get to know students regarding their needs, characteristics, levels of learning, etc., and these issues influenced their planning. Therefore, developing a lesson plan became challenging. The results suggested that opportunities should be created for pre-service teachers to get acquainted with students during their practice. Further investigation will also help us to understand more about how we can help our future teachers to develop skills to plan their lessons effectively.

Conclusion

The study determined the effect of Buzz and Adaptive instructional strategies on lesson planning skills of pre-service teachers in integrated science. Over the years pre-service teachers found lesson plan writing difficult and felt frighten when facing students during micro-teaching and teaching practice exercise. This study found that if these strategies were employed in teaching pre-service teachers,

significant improvement will occur in their lesson planning skills which will invariably help to improve the performance of pre-service teachers in micro-teaching and teaching practice exercise. Also, when they get to the field as a professional teacher impacting knowledge to the pupils.

Implications of Findings

The study determined the effect of Buzz session and Adaptive environment instructional strategies as the determinants of pre-service lesson planning and teaching skills of integrated science in Southwest, Nigeria. The findings of this study have implications for lecturers in colleges of education to employ the two innovative strategies in teaching science education courses to pre-service teachers in order to acquire prerequisite skills relevant in writing lesson plan and in the delivery of lesson to students. Based on these findings, necessary materials and apparatus should be provided for the pre-service teachers to use in the course of writing of lesson. Government, policy maker and supervisors should provide their own quota towards education in order to achieve the aims and objectives of education as stated in the National Policy of education. The colleges of education would be able to produce qualified and well baked teachers into the society.

Recommendations

Based on the summarized findings above, and the researchers' experience in the course of this study, the following recommendations are made:

4. Lecturers should be discouraged from using teacher/facilitator centered instructional strategies in training pre-service teachers but be encouraged to employ learner–centered instructional strategies which are activity based, such as Buzz Session and Adaptive Environment strategies. The use of innovative strategies that are activity based will promote high level learning performance as well as enabling the pre-service teachers to acquire necessary skills during training.

5. Facilities should be provided for the retraining of teachers in the use of innovative techniques in science instruction through conferences, seminars and works

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INFLUENCE OF GENDER ON STUDENTS' LEARNING OUTCOMES IN COMPUTER PROGRAMMING IN LAGOS STATE JUNIOR SECONDARY SCHOOLS

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Abstract
This study examined the influence of gender on students' learning outcomes in computer programming in selected junior secondary schools in Lagos State. A correlational design was adopted for the study. The population for the study comprised 50 students from public junior secondary schools in Education District V of Lagos State. The purposive sampling procedure was used to select 25 students each from two Model Junior Secondary Schools in the District. A random sampling procedure was adopted in selecting participants for the study. Two research hypotheses were generated and tested with a Pearson correlation coefficient at a 0.05 level of significance. Findings from the study indicated that gender has a significant influence on students' competence in computer studies ($r = 0.39$; $p<0.05$) and on students' achievement in computer programming ($r = 0.46$; $p<0.05$). Based on this evidence, students' gender should be given consideration in learning computer programming, particularly at the secondary school level. The study recommended that committed programming students should be encouraged to pursue studies in programming languages to enhance their employability status in the field. Also, video-based instructional paackage should be used to facilitate classroom learning.

Keywords: *Gender*, *Students' Competence, Programming Language, Students' Achievement*

Introduction

The challenges facing the teaching and learning of Computer Studies and programming in Nigerian Secondary Schools are enormous and

range from lack of Information Communication Technology (ICT) infrastructure, comprehensive ICT Policy, and teachers' ICT pedagogical development, inadequate teaching strategies to teachers' ICT competency (Akinola, 2016; Ogunleye, 2009; Ogunleye & Afolabi, 2007). Whereas, computer programming language is the neo-universal language of our changing planet, a basic literacy level in computers is needed in the digital age. It is a special language written by computer programmers to be understood by a computer. Similarly, computer programming language consists of various commands that users give to computers to execute given tasks. Programming languages are a set of words, symbols, and codes that are used to write computer programmes. The process of writing these instructions (programme) is called programming. Programming Language can be defined as sets of rules given to the computer to perform a given task. It can also be described as the process of writing a programme that a computer can execute to produce the expected or desired result (output). Programmes are sets of instructions that computers execute to perform tasks written in that programming language**.**

Programming involves the ability to generate solutions to problems. Finding practical solutions refers to one of the learning outcomes through which computer users solve pedagogical and environmental problems. Computers solve broad problems when they are broken into sub-problems and, they create a generalisable, central solution of absorbable parts. Also, the student acquires the ability to create usable, readable, and attractive solutions in desired areas of interest. Furthermore, the knowledge of programming helps students acquire a sense of mastery over a wide range of technological gadgets. It helps in establishing contact with some of the deepest ideas of different disciplines such as Science, Engineering, Mathematics, and the art of intellect- and mind-building. This explains how it is becoming increasingly simple for students to create applications that solve problems such as traffic congestion, electronic money transfer, and so on. There is no doubt that learning computer programming at a young age is helpful for all students, at least in their everyday life. Learning programming helps young students to gain advantages in thinking, processing, and communication. These benefits are in proper alignment with developing and improving the

21st century skills among learners (Metodija, 2017). Unfortunately, even teachers perceive issues pertaining to programming and ICT integration into schools' curricula as problematic (Ogunleye, 2007).

Programming and computational thinking skills are becoming ever more important in our society and work life. Goode and Chapman (2013) in European Schoolnet reported that a growing number of countries in Europe are refocusing their ICT curricula to developing students' computer programming and coding skills, and introducing the topic in national, regional and school curricula. This plan, according to Ogunleye and Apata (2018), was to harness the majority of the countries to develop an immediate plan to integrate programming into their educational curricula with the aim of developing core skills such as logical thinking, coding, and core competency for solving problems. These skills are envisaged to foster employability in response to the needs of the job market and to encourage students to study Computer Science at a higher level. In the opinion of Akinyemi and Aremu (2014), programming improves the mathematical skills of students in a fun way that teaches problem-solving skills and helps kids to visualise abstract concepts.

The knowledge of computer programming enables students to solve tasks that demand strategic reasoning, critical thinking, insight, and creativity. These tasks appear to be far more engaging for students; also, it prepares them better to take their place in a knowledgeable society. Many researchers believe that engaging in programming tasks not only enables students to gain knowledge of programming, but also has a great potential to promote their higher-order thinking performance (Keppens & Hay, 2008; Wang, Huang and Hwang, 2016). The ability to understand and implement the programming language is a sine qua non skill for students to acquire. In today's digital world, Programming is a fundamental skill, alongside Mathematics and Reading, but very few learners have the opportunity to learn it because it is rarely taught in schools, due to teachers' lack of requisite programming skills (Adedoja & Fakokunda, 2015; Tynker, 2017). However, there have been erroneous opinions that programming is necessary for only gifted students and those who will continue to deal with programming as their future profession in Engineering and Computer Science. Fortunately, leading scientists,

inventors and educators now recognise the benefits of programming for all students and recommend it for all age groups.

Given the importance of programming as one of the most valuable 21st century skills, the main challenge is how to enable learners to start programming at an early age, as scholars (Kátai, 2015, Tynker, 2017) assert that programming is best learnt at a young age. Despite the growing use of technology in daily life, there is a persistent gender gap among participants in technological fields, with females participating less. Females also receive less exposure to technology-related activities compared to boys and this discrepancy starts early. It was reported in many Computer Education studies that female enrollment in Programming was remarkably low (Hoegh & Moskal, 2009). For example, in secondary schools, boys are more likely 'to dominate computers when [they are] available in mixed classrooms' and girls remain 'underrepresented' in lunchtime or after-school clubs (Johnson 2008). This was attributed to the more negative attitude of females towards computers than males (Chang, Shieh, Liu & Yu, 2012). Accordingly, the result of another study showed that females' mean scores for attitude towards programming were significantly lower than males, as opposed to the result of the studies of Yildirim and Kaban (2010) which reported a high performance of females.

In the literature, gender is one of the factors mentioned to have considerable effects on student's academic performance, especially in science-related subjects. Gender is the range of physical, biological and behavioural characteristics differentiating between male and female. Past studies suggest that girls are more successful in school work than boys. Similarly, Hartley and Sutton (2013) reported that boys develop a gender stereotype of girls as academically superior in motivation, ability, performance and self-regulation.

Interestingly, the percentage of female computer programmers began to decline sharply in the 1980s with the advent of the personal computer or, more specifically, when computers began to appear in homes. Even as job opportunities for programmers and software developers peaked in the 1990s, the number of women pursuing such opportunities continued to decline. Today, computer programming is very much a male-dominated field, with women making up only 25%

of computer programmers nationwide, and women are not even up to half of that percentage in software development and engineering jobs (U.S. Department of Labor, Bureau of Labor Statistics, 2004).

Women are severely underrepresented in the field of Computer Science. Expectedly, female computer teachers are as well underrepresented in schools. The attitude of women towards computing is one of several factors that might explain their low participation in computing. According to findings, Programming is not fascinating to females. This could be attributed to females' low confidence and programming abilities. Therefore, their ability for programming and attitudes towards it are more negative than males, as found by Korkmaz and Altun (2013). Consequently, there have been inconsistent results concerning gender differences in different domains of learners' achievement. However, the poor performance in science-related subjects, according to Betiku (2012), is unrelated to gender but has been attributed to the methods of teaching, the attitude of the teachers that teach the subject and students' disinterest in the subject among others.

Gender influences how people will perform within computing contests In Stoilescu and Egodawatte's (2010) work on "Gender differences in the use of computers, programming, and peer interactions in computer science classrooms", it was discovered that in computer programming, female students were not so involved in computing activities, whereas, male students were heavily involved.

Subsequently, several studies have been conducted in the area of gender-related differences in the academic achievement of students in science and it has been noted that males perform better in Computer Studies tests and examinations than females (Okwo & Otumba, 2007; Aremu, 1999). In some other cases, females attain better achievement than males. Consequent to this, this study was conducted to examine the impact of gender on students' learning outcomes in Computer programming.

This study was hinged on the cognitive theory of multimedia learning which was propounded by Mayer in 1947. The theory asserts that people learn more deeply from texts, pictures and videos than from texts alone; the proponent later referred to the theory as the Multimedia Principle (Mayer, 2005). The theory addresses the issue

of how to structure multimedia instructional practices and effective cognitive strategies to help people learn efficiently and effectively. This means that multimedia instruction uses cognitive research to combine words and pictures in ways that maximise learning efficiency. Cognitive theory of multimedia learning is relevant for this study because it proposes how to facilitate effective learning with multimedia instead of the traditional practices for teaching and learning activities. Okanlawon and Fakokunde (2019) submit that video-based instruction allows students to learn at their pace, with minimal guidance, while also allowing them to concretise abstract concepts.

Statement of the problem

Computer programming is included in the junior secondary school curriculum to expose students to the advantage of critical thinking and problem-solving skills; this is geared towards grooming globally competitive individuals and promoting computer science-compliant learners who will engender growth and development. Learning programming is a complex task because it requires the generation of unique ideas, new thinking, and creative problem-solving skills. Previous studies focused more on intervention to improve learning outcomes in computer programming, yet, there are reports of poor academic performance in computer programming, especially among female students. Therefore, this study examined the influence of gender on students' learning outcomes in computer programming among junior secondary school students in Lagos State.

Hypotheses

Two research hypotheses were generated for this study:

Ho_1 There is no significant influence of gender on students' achievement in computer programming language.

Ho_2 Gender will not have a significant influence on students' competence in computer programming language.

Methodology

The study adopted the correlation design. Population of the study comprises 50 students from public junior secondary school students in Education District V of Lagos State. The purposive sampling procedure was used to select 25 students each from two Model Junior Secondary Schools in the Education District, based on the availability of well-equipped Computer Laboratories and willingness of the school to participate in the study. A simple random sampling procedure was adopted in selecting participants for the study. Data were collected using Students' BASIC Programming Competency Rubric (SBPCR) and BASIC Programming Skills Achievement Test (BPSAT). The instruments were validated with reliability indices of 0.79 and 0.81, respectively. The hypotheses were tested with Pearson correlation coefficient at 0.05 level of significance.

Results

Hypothesis 1: There is no significant influence of gender on students' achievement in computer programming language.

Table 1: Influence of gender on students' achievement in computer programming language

Variables	**R**	**P**	**Remark**
Gender Students' achievement	0.39	0.092	NS

The obtained result from Table 1 reveals that the boys have a higher achievement score (35.35) than the girls (23.81) in computer programming language, with a positive relationship which is significant ($r=0.39$; $p<0.05$). Hence, the null hypothesis is not rejected.

Hypotheses 2: Gender will not have a significant influence on students' competence in computer programming language.

Table 2: Influence of gender on students' competence in computer programming language

Variables	**R**	**P**	**Remark**
Gender			
Students' competence	0.461	0.041	S

Table 2 shows that the influence of gender is positive and significant in students' competence in computer programming language. The r-value is 0.46 ($p < 0.05$). This shows that the null hypothesis is rejected.

Discussion of Findings

The study revealed that gender had no significant effect on students' competence in computer programming language. In this study, male and female demonstrated competence in computer programming language. Perhaps, the treatment was suitable to both genders as it provided male and female with equal learning conditions and the opportunity to participate actively in the learning process. Also, the treatment might be of interest to both genders, considering the nature and importance of computer technology and the influence of technological tools in this generation. The results revealed that sometimes, the competence of students may not necessarily be based on their genders because the outcome of the result, as seen in Table 1, shows an improvement in the achievements of students without gender bias. The findings corroborate the submission of Betiku (2012) that students' performance is not determined by both genders' interaction and treatment, but on their academic achievement. In another study by Tynker (2017), it was empirically demonstrated that gender difference may not come into play at all when it comes to computer programming. The result has shown that sometimes, gender has no influence in the competence of students.

However, the result is in contrast to the findings of Hartley and Sutton (2013). In their study, a stereotype threat accounts for boys' academic underachievement. More specifically, boys develop gender stereotypes that girls are academically superior in motivation, ability, and academic performance. The contradiction in both findings is perhaps based on the environments where the studies were carried out or the level of students involved in both studies. This also corroborated the finding of Adedoja and Fakokunda (2015) that male

or female academic performance in computer programming is only due to chance and not gender. In addition, the study carried out by Lau and Yuen (2011) reveals that gender, learning style and mental model influence programming performance. Likewise, the result of another study, Hoegh and Moskal (2009), showed that the mean scores of females' attitude towards programming were significantly lower than males' as opposed to the result of Yildirim and Kaban (2010) where the attitude of pre-service teachers about computer-supported education favoured high performance for females.

Additionally, the study revealed that there is an effect of treatment and gender on students' achievement of competence in computer programming language. This implies that treatment affects students' competence and achievement in computer programming language because the group which experienced a video-based instructional strategy had a higher competence and achievement score than their counterparts. Perhaps, this was possible because the video-based strategy allowed students to pause, stop, rewind and manipulate the timeline of learning and apply the ideas gained during the learning process to their interaction with the environment. This is in accordance with the statement of Okanlawon and Fakokunde (2019) that video-based instruction allows students to learn at their pace and with minimal guidance. Based on this finding, it can be deduced that the treatment is favourable to male and female concerning achievement in programming. Possibly, the simple but challenging nature of the treatment, coupled with the level of exposure of the learners might be an added advantage. This finding corroborates the findings of Kritina, Jacqueline and Lindy (2017) that video-based instruction improves students' learning.

However, these findings completely disagree with those of Korkmaz and Altun (2013) who investigated engineering and CEIT students' attitude towards learning computer programming. Korkmaz and Altun (2013) found that the attitude of the male students towards computer programming learning is significantly higher than that of the female students. This may have been possible because of the number and the nature of the students in the study. However, in the current study, the results showed that though the male students had a slightly better performance compared to the female students, as seen in Table

2, this difference was not significant. Perhaps, the female students were barely challenged by the activities. In this context therefore, the female student has been proved to be less competent because they adopted less risky approaches to computing tasks compared to their male counterparts (Lau and Yuen, 2011; Helgeson, 2005). The results suggest that some other factors like interest or fear may be responsible for the low representation of women in computing as it is being experienced today in students' participation in programming. This is despite the recognition of programming as a laudable computing profession as advocated by U.S. Department of Labor, Bureau of Labor Statistics (2004). This further explains the opinion of Korkmaz and Altun (2013) that programming is not fascinating to females, especially in developing countries such as Nigeria. Perhaps, the females' attitude and low confidence in Computer Programming sometimes affects their achievement.

Recommendations

Based on the findings of this study, recommendations were made that:

i. Male and female should be provided with equal learning conditions and the opportunity to participate actively in the learning process.
ii. Gender should not be a criterion for students' placement in schools.
iii. Committed programming students, male and female alike, should be encouraged to pursue a study in computing and programming languages to further increase their employability in the field.
iv. Teachers should use VBIS, and they should be made aware of its purpose and effectiveness. They should also be informed about the factors that lead to better teaching and learning in classrooms.
v. Practical and innovative approaches should be employed to improve the teaching of computer programming so as to facilitate students' learning.
vi. Government should create policies to encourage absorbance of female students into further study in computer science and other science-related courses.

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PROSPECTS AND CHALLENGES OF ENTREPRENEURSHIP AND HIGHER EDUCATION IN THE NEW NORMAL

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Abstract
Entrepreneur is someone whose sense of creativity prompted to embark upon new initiatives (enterprise), nurture the enterprise and bring it to a point of actualizing his or her economic benefits by building capital. Therefore, entrpreneurship is a direct willingness and the ability to seek out investment opportunities and to run it as an enterprise for profit making. It is worthy of note that prospects of entreprenership and higher education is a necessity that will stimulate economic growth. This paper, examined the prospects and challenges of entrepreneurship and higher education in the new normal ex-ray entrepreneurship and education, the needs and the concern in entrepreneurship education and entrepreneurship in higher education. It also discussed types of entrepreneurship as well as essentials of entrepreneurship training in higher education. It also exposed benefits and gains of entrepreneurship in higher education. The paper recommended that entrepreneurship and education should be given a pride of place in every higher institution.

Keywords: *Entrepreneurship, education, higher educati*on.

Introduction

Entrepreneurial education is becoming a global phenomenon due to world growing unemployment and poverty driven crimes and crises. This has made many countries of the world, developed or underdeveloped to embrace entrepreneurship education which is a relevant and functional education in higher education. Nigeria as a nation need to reposition her graduates and higher education into

aggresive motivated and enterprising individuals in a way that will bring drastic change to our higher education. Stakeholders in education have constantly lamented the unfortunate trend in which our higher institution annually turn out graduates who roam our street daily in searh of non-existing jobs.

Every year, there is a large turn-out of graduates especially from various teriary education institutions in Nigeria, who join the astronomical number of unemployed youths in the labour market. Ironically these frustrated unemployed youths take solace in all forms of crimes and social vices such as kidnapping, rituals, bunkering, prostitution, cultism, armed robbery, drug abuse, political thuggery and so on. All these forms of criminality pose a great challenge to the prospects and challenges of entrepreneurship and growth of education in Nigeria. According to Afolabi, Loto, Yusuf in Jagusah Adegbesan (2020) it is not superfluos that an efficient and effective system of education which places high priority on entrepreneurship education for self-reliance is a must for alleviating the various socio-economic problems confronting Nigeria today. The challenges of graduate unemployment in the country has become so critical that it continues to re-echo at various national, and international conferences and submits, that is why it is necessary to create awareness about entrepreneurship education in higher education.

Entrepreneurship is a must in our tertiary education if Nigeria is to forge ahead scientifically, technologically, economically, politically and socially and attain transformation, it must be taken out of its present economic recession and frontally tackle the problem of poverty and graduate unemployment through relevant and viable entrepreneurship education. With the current unemployment and the structure of Nigeria's economy still tilting towards the oil sector, most of her foreign direct investment is geared to the oil and extractive sector, there is need for action oriented education that will reduce unemployment and underemployment. In this development, Afolabi (2011) declared that entrepreneurship education equips individuals with entrepreneurial skills, knowledge, right attitude to work and re-sharpen their talents, natural endowments and competencies so as to make them become self-reliant and successful entrepreneurs. A graduate entrepreneur is one who ought to have been exposed to creative values while in the classroom learning, one whose knowledge is not tied to some bookish recipe; one who can link theories to practice, or one with demonstrable intellectual capacity to think and

act out of the box in order to find solution to life needs, human needs and national concerns. Institutions of learning in Nigeria are established based on the belief portrayed in the national philosophy of higher education which insists on providing education that "... fosters the worth and development of the individual, for each individual's sake, and for the general development of the society" (Federal Republic of Nigeria (FRN) 2014); and which requires that education not only develops her citizenry into sound and effective beings but to produce high level 'human power' whose characteristics should be obsessively focused, articulated, and resouceful. In this light, university graduates are expected to turn out to typical become industrial leaders in the world of work with introspective skills that will aid them to embrace ;job creation; wealth generation and engagement into innovative creation of quality things, materials and money.

Conceptualisation of Terms

The word entrepreneurship comes from a French word meaning to "undertake", (Makinde and Adeoye in Oyinloye and Afolabi (2016). Entreneurship is a person who makes money by starting or running business, especially when this involves taking financial risk (Hornby, 2000). This presents an entrepreneur as not only a risk taker, but also as an independent person and owner of a business or businesses. This definition certainly excludes government from the risk of the individual, as it makes the individual involved, more careful and serious than he would have been when in public service where salary and other emoluments remain constant even against a dwindling economy. Therefore, the focus of entrepreneurship as old as it may be in the educational systems of many nations of the world is to provide for new and growing business ventures and products which will provide a solution for unemployment and the quickest way to fast track the economy and reduce poverty as exemplified in developed countries.

The ability to transcend traditional ideas, rules, patterns, relationships or the like will equally create meaningful new ideas, forms, methods and interpretations which expand the scope of the nations. Entrepreneurship education is not just about teaching someone to run a business, it is all about encouraging creative thinking and promoting a strong sense of self-work and accountability. It encompasses the totality of all values that makes one succeed in his chosen career. Hence, motivation fuels the attitude that builds the

confidence necessary to sustain the persistence, Oyinloye and Afolabi (2016).

According to Afolabi and Alao (2012) entrepreneurship education is inculcation in the individual's entrepreneurial skills, knowledge, attitude and competencies that would make such individuals live happily and successfully in the society and contribute meaningfully to its development. Akanbi (2012) defined entrepreneurship education as the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological and social risks and receiving the resulting rewards of monetary and personal satisfaction. Based on this definitions it is obvious that entrepreneurship education is a form of education that assists students to develop and use their creativity and to take initiatives, responsibility and risks, as such students are nurtured and empowered with the enterprising productive abilities and habits that will enhance dignity of labour and desire for wealth creation,(Jagusah and Adegbesan, 2020).

Entrepreneurship education is a conscious effort directed at inculcating transformative skills in those who become committed to it. This made entrepreneurship education become necessary.

Objectives of Entrepreneurship in Education

The following are the objectives of etrepreneurship highlighted by Jagusah and Adegbesan (2020):

1. To provide meningful education for youth which could make them self-reliant and subsequently encourage them to drive profit and be self independent.
2. To produce graduate with the trainning and support necessary to help them establish a career in small and medium size business.
3. To provide graduates with trainig skills that will make them meet the manpower needs of the society.
4. To provide graduates with enough training in risk management.
5. To stimulate industrial and economic growth of rural and less developed area.
6. To provide graduate enough training which will make them creative and innovative in identifying new business oppotunities.

7. To provide small and medium sized companies with the oppotunity to recruit qualified graduares who will receive trainig ad tutoring in the skills relevant to management of the business centre.

From the above objectives, it is evident that if this type of education is given all it deserves and propeerly implented, it will produce quality graduates that will foster job creation and reduce or eliminate poverty in Nigeria. This could be realised when the graduates are self-reliant by establishing their own business (small/medium) scale enterprises. When a job opportunity is created it will invariably help to reduce poverty and enhance better standard of living of an individual in Nigeria**(**Jagusah and Adegbesan 2020).

Relevance and Values of Entrepreneurship Education

Entrepreneurship education is important to create varied opporunities that will stimulate economic growth. This is latest vision loaded with impecable values that will effectually shine a spotlight on the development and reinforcement of small and medium scale businesses, services and enterprises in Nigeria. Higher institutions of learning are therefore mandated to train, educate and produce graduates who will not only possess specific knowledge in the discipline they applied to read and get credentials, but have the right thinking necessary to initiate, start and grow successfully businesses with reduced risks and, or failures.

Entrepreneurship Education plays a vital role in the political and economic development of any nation. Functional quality education is the only means through which people could develop their skills, capacities or potentials. Entrepreneural education is an investment that enriches the lives of the citizens and a very high long rate of returns to the national economy. This is possible when jobs are created for the citizenry by establishing a lot of business that will accomodates the rate of unemployed youth in Nigeria. A qualified graduate of entrepreneurship education would have acquired enough skills relevant to management of small business centre, Adakah and Edomwande (2020) in Jagusah and Adegbesan (2020).

However, Adakah and Edomwande (2020) in Jagusah and Adegbesan (2020) stated the following as relevance of entrepreneurship education:

1. Creation of self-employment: An entrepreneur provides job for himself by establishing small business centre. According to Aiyeduso in Olorunmolu (2008) helps to reduce the problem of unemployment and jobs/employment for himself alone, but provides for others too. This in turn helps the individual to increase per capital income and hence improve standard of living.
2. The entrepreneur determines or identifies the specific wants of the people and the type of goods and services that will fulfill the wants of people. Emeruwa (2005) asserted the entrepreneur does only identify but mobilizes the resources to the opportunities by assisting men, materials, money and machines to explore the opportunity.
3. Production of goods and services that is important to well-being, comfort and happiness of individuals in the society at large.
4. Entrepreneurship stimulates rural, economic and industrial development. They contribute to the development of rural areas. They do this by establishing small/medium scale enterprise in such areas by discouraging rural migration. They provide ample job opportunities to the rural dwellers.
5. The entrepreneurs are usually motivated in their activities not only by the need for material contributions to the welfare of the communities but also desire to make profit. This uplifts the dignity of labour.
6. Through entrepreneurship education, utilization of local resources is made possible.
7. Through entrepreneurship education, a pool of potential entrepreneurs who are well equiped with skills and technical know how to manage small/medium scale industries are produced. This will equally help in job creation.
8. A graduate of entrepreneurship education is expected to have acquired enough skills relevant to the management of small business centres. Creation of self- employment. The entrepreneur determines or identifies the specific wants of the people and the type of goods and services that will fulfil those wants most comfortable. Emeruwa (2005) asserted that the entrepreneur does not only identify but also mobilize and organize the resources to tap the

opportunites by assisting men, materials, money and machines to explore the opportunity. -

9. The entrepreneurs are usually motivated in their activities not only by the need for material contributions to the welfare of the communities but also the desire to make profit (Akinbode, 2009). This uplifts the dignity of labour. Through entrepreneurship education, utilization of local resources are made possible. The graduates of this specialized education set up their small/medium scale business, which will enable them to utilize the local resources available in the vicinity. The uses of local raw materials are discarded by products of large firms as primary input in their production processes.
10. Through quality of relevant entrepreneurship education, Nigeria could produce a lot of entrepreneurs who could establish and manage businnesses on their own. Based on the above merits, it is no doubt that the entrepreneurship education could be used as a major weapon in reducing the worrisome, untamed and ever problem of unemployment and poverty in Nigeria.

Prospects of Entrepreneurship Education

There are many prospects that can be derived from entrepreneurship education. They are highlighted as follows:

1. Entrepreneurship education will give the prospects of obtaining tremedous advantages which include increase in the chances of enterprise profitability.
2. It will help toward the goal of educating people to align with the world of business, create trades and mercantilism, create labour and employment, build skills and boost innovative drive with inherent production of goods and services for econonomic growth. Besides generation of employment opportunities and allied alternatives, Nigeria needs entrepreneutship education that is viable for industrial developnent, marketing and market factor growth capacity building on the citizenry and resource redistribution.
3. It will help reduce problems of unemployment and underemployment in Nigeria.
4. Entrepreneurship education will not only expose learners to their original course content, but will at the same time

introduce experimental essence that will link the classroom to the market, connect learners to traders and at the same time, establish synergy between their tools and operational fields. Entrepreneurship education is a poverty reduction effort which is capable of providing formal and informal education to the poor, the poorer, the poorest of the poor and the bottom poor who are vulnerable to illiteracy, death and ill health.

To support the above prospects Unachukwu and Okorji (2016) gave the following prospects of entrepreneurship education:-

a) Every State owned institution should review their faculty viability in order to reduce weak courses to accommodate entrepreneuship education and training especially in predominantly marcantile states. Implicitly graduates can create, manage, and share wealth following some degree of expertise learnt, observed and acquired.
b) The federal government must submit to the pressures for entrepreneurship development through institutions as well as crucial interventions from Non Governmental Organizations, Agency (and individuals). Special funding assistance should be given to institutions to enable them create conducive institutional context, retain their academic staff through professinal development means, provide regulations and policy frameworks and vigorously financially support seed stage of new business owned by graduates.
c) Enough prospects for the entrenchment of entrepreneurship education in institutions of higher learning still abound in time, ideologies, technoligical and in fact all levels of micro-system exigencies. It also generally upholds that there are great possibilities of aligning individual courses of study which a learner is admitted to read with the demands and expectations of the world of work.
d) There is immediate need to proliferate entrepreneurship education in Nigeria in order to make products of institutions employable, innovative and creative in all spheres of life. For Nigeria to really grow at macro-economy sphere, her micro-economic activities, cottage and agro-allied ventures must reflect in what she teach at schools.
e) Entrepreneurship education should be adopted and treated like the art and science of using the books and brains of the

intellectual to create and inculcate those critical thinking and imaginative, prophecy to build on learners the spirit of dream pursue and live audaciously to actualize it.

f) Microcredit scheme should be used to encourage job seakers to get seed money. This will be used to augment the efforts of relevant agencies like the former National Directorate of Employment (NDE).

g) There should also be start-up entrepreneurship education as foundational knowledge at the primary (Basic Education) and secondary levels, by interesting entrepreneural concepts in the curriculum. Students at secondary schools level should take subjects with entrepreneurship bias to equip those who will not pursue higher degrees to have rudimentary back-ups before going into apprentiship/craftmanship per se and the world of work.

h) Entrepreneurship education will give the prospects of obtaining tremedous advantages which include increase in the chances of enterprise profitability.

i) Besides generation of employment opportunities and allied alternatives, Nigeria needs entrepreneutship education that is viable for industrial developnent, marketing and market factor growth capacity building on the citizenry and resource redistribution.

j) Entrepreneurship education will not only expose learners to their original course content,but will at the same time introduce experimental essence that will link the classroom to the market.

Conclusion

Entrepreneurship education is very essential in Nigeria because education is the only reform agent that can change persons and their character, attitude and behaviour. It is an indispensable instrument for changes in economic technology and science. Entrepreneurship involves changing values, it involve also one who can link theories to practice and or one with demonstrable intellectual capacity to think and act out of the box in order to find solution to life needs, human needs and national concerns. Entrepreneurship education therefore, will not only expose learners to their original course content, but will at the same time introduce experimental essence that will link the classroom to the market and connect learners to traders.

In conclusion, entrepreneurship education has prospects in higher education and in Nigeria at large.

Recommendations

1. Entrepreneurship education should be given a good of place in every higher institution in Nigeria.
2. Higher education curricular development efforts should be geared toward the goal of educating people to align with the world of business, create trades and mercantilism, create labour and employment, build skills and boost innovative drive with inherent production of goods and services for econonomic growth.
3. Institutions of higher learning in Nigeria offering entrepreneurship education should be mandated to establish Entrepreneurship Education Centre. This Centre should be equipped with all the modern facilities which could enrich the students with both theoretical and practical skills acquisition.
4. Government should encourage her relevant agencies, micro-finance banks and other financial institutions, philantrophic organisations and Non-Governmental Organisations to provide the capital base needed for the take-off of small businesses by the products of entrepreneurship education.
5. The teaching professon must be well motivated to prevent exodus of Nigerian teachers to various developed countries.
6. All tertiary institutions should be made to run entrepreneurship education as a dișcipline.
7. Funding of entrepreneurship education must be effective and on a continuous basis. Effective supervision and evaluation of program implementation must also be constant.

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