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Aims and Scope

Description: Biannually, the East African School of Higher Education Studies and Development (College of Education and External Studies, Makerere University) produces *Makerere Journal of Higher Education* (MAJOHE) (ISSN: 1816-6822 [print]; 2707-6113 [online]). The goal of the Journal is to provide a visible outlet for definitive articles that discuss the theories, practices and policies relating to the role, development, management and improvement of higher education from an international viewpoint. Therefore, the editor invites contributions that link relevant theory and research evidence to the policy and practice of higher education. Though a highly diverse range of contributions will be considered, the Journal gives special preference to conceptual and empirical writing that is relevant to the understanding, promotion and constructive criticism of the reform agenda in African higher education institutions and national systems and integrates pertinent international developments, debates and challenges. This is because the Journal's management board acknowledges that the questions, issues, theories and policies pertaining to the development of contemporary higher education institutions and systems require in-depth study and international comparison. Preference is also given to contributions that discuss new initiatives at regional and continental levels (including the work of national and multilateral higher education organisations and associations). The Journal's editorial policy prefers submissions that synthesise the significance of different higher education policy alternatives and geographical experiences in explaining the phenomenon at hand. In addition to rigorous examination of the 'local dimension' of the issues that they expound, therefore, contributions mirror conversance with relevant international perspectives and experiences, thereby situating the debate in a broad discourse that facilitates holistic understanding of the issues at hand. Edited from Makerere University, Uganda, the Journal draws on the expertise of a diverse editorial board, as well as a wide range of reviewers in and beyond Africa. The Journal is committed to the publication of both experienced and early career researchers so its editorial policy puts overriding attention on helping contributors to reach the level of quality that is deemed fit for publication through ensuring relevant, fair and penetrating reviews as well as timely relay of feedback to contributors.

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Editorial

I am delighted to welcome you to the eleventh volume of the *Makerere Journal of Higher Education* (MAJOHE). The two issues in the volume are being published at the same time, belatedly! However, it is a better volume, thanks to the insights (and energy) of the new additions to our management board and to the support of Mrs. Sioux Cumming (Programme Specialist at the International Network for Advancing Science and Policy [INASP]). Sioux's support was given under the auspices of a training workshop on Improving Journal Publishing Practices and Standards hosted by the Uganda National Council of Science and Technology (UNCST) in August 2019. At the workshop, I decided that, on returning home, we would upgrade some features of MAJOHE to reach *the gold standard*. As it turned out, however, it would take us some time and significant work to get there, which is why I am very proud to announce that we are now there. Moreover, the volume is also quite diverse—with writing drawn from Botswana, Ethiopia, Ghana, Nigeria, Tanzania and Uganda and touching on teacher education, technology in higher education, university governance, student loan schemes, pedagogy, TVET, student services and marketization. I hope you find the volume a useful resource. As usual, the Board and I thank the authors for submitting their work and for working hard to revise it as advised; the reviewers for giving the authors constructive feedback; and African Journals Online (AJOL) for hosting the journal online.

Editor

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Rethinking Teacher Education towards Producing Critical and Creative-Minded Educators in Nigeria

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Abstract. This paper discusses the training of the Nigerian pedagogue. It contends that the curriculum used to prepare the Nigerian pedagogue must be enriched with the capacity to produce critical and creative teachers who will, in turn, produce critical and creative Nigerians. This will be beneficial to the education system, for the latter will henceforth be managed by stakeholders who possess the ability to innovate the system. Such a system will automatically be rid of robots and fuddy-duddies. The paper suggests three options to rejuvenating the teacher education curriculum: infusing a new course on 'Logic and Aesthetics' into the teacher education curriculum; strengthening the philosophy of education component of teacher training courses and making it core; modifying the existing general course on 'Philosophy & Logic' into 'Philosophy, Logic & Aesthetics'; and enriching the content in such a way that it can instil both criticality and creativity.

Keywords: Teacher-training; Curriculum innovation; Reform.

1 Introduction

The regular contemporary Nigerian youth seems to lack critical and creative mind-set. Ogunyemi (2016) observed that the youth have not demonstrated enough critical and creative thinking in their daily activities, and this is responsible for the heavy criticisms levelled against the contemporary education system in Nigeria. The youth appears to lack creative and critical mind-sets because he is being taught by a teacher who seems to lack it. It has been said times without number that 'no

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education system can rise above the quality of its personnel' (FGN in NPE, 2013), that is to say, a student may not be able to rise above the quality of his teacher. The teacher's non-critical mindedness is evidenced in his inability to challenge the system, effect any substantial change and make his unique contributions to the system he/she works for. With such type of teachers, educational practices remain 'as it were in the beginning, it is now, and ever shall be, world without end'. I had somewhere referred to such teachers as education robots (Akinsanya, 2015). It is evidenced in their inability to manoeuvre teaching methods and improvise instructional materials as teaching aids. For instance, if you visit schools where student-teachers are engaged for teaching practice, one would hardly see them bringing any ingenuity into the use of instructional aids; what you see at best are carelessly prepared cardboards, and that is all. The qualified teachers, who are expectedly cooperating-teachers to these student-teachers, do not even see any problem with what is being done. This is the tragedy. Little wonder why teachers are hardly invited to national seminars on education where policies affecting them and the entirety of education are being formulated. Even if invited, how many of these teachers have the capacity to effect a meaningful and reasonable change to the status quo? This is the challenge.

2 Statement of Problem

Arising from the above background, there is an urgent need to revise the curriculum predisposed to the Nigerian student. To make the student develop a critical and creative mind-set needed to surmount the challenges of the modern times, the training of such a student must be infused with subjects which could foster criticality and creativity. But in the first instance, if the curriculum in actual terms features such subjects, and the teachers to handle the latter are far from possessing the critical and creative spirits, efforts would have been futile. No wonder Akinsanya (2008) said that the best educational programme stands thwarted if its handlers are ill-equipped. Sequel to the fact that the teacher is very key in the project of curriculum-change and consequential attitudinal change, this paper focuses attention on the training and preparation of the Nigerian teacher. It considers the training of the teacher for the acquisition of critical and creative habits as foremost. The paper attempts the possibility of tinkering with the curriculum predisposed to the Nigerian teacher at either the National College Education level, or University level, so as to make the Nigerian teacher *ipso facto* a critical and creative mind. Such a mind will, *ceteris paribus*, possess the ability and desirability to utilise a curriculum which instils criticality and creativity on the consciousness of the Nigerian child.

3 Critical Mindedness

Critical mindedness is the state of a mind capable of engaging in critical thinking. Critical thinking, in this case, is different from any other usual or regular form of thinking; it refers to thinking in its deepest quality. Thinking becomes critical when it is reflective and rigorous; when it satisfies some standards, some rules or some criteria of acceptance. No wonder Heidegger (cited in Ogunyemi, 2015) had defined critical thinking as a mental process of subjecting issues to rigorous questioning and analysis. For Ennis (1987), critical thinking is a reasonable reflective thinking focussed on deciding what to believe and do. Paul (1990) opines that critical thinking is the ability and disposition to critically evaluate beliefs, their underlying assumptions, and the worldviews in which they are embedded. Oladipo (2011) considers critical thinking as an activity which involves a careful examination of claims and counter claims with a view to determining whether or not such claims and counter claims are sustainable. Lipman (1991) classifies critical thinking as that form of thinking which facilitates judgement for it relies on criteria; it is self-correcting, and it is sensitive to context.

In all the definitions, one could infer two things: that critical thinking indicates the ability and the disposition to subject any form of thinking into some rigorous rules or tests. This inference tallies with the position of Bailin & Siegel (Blake, Smeyers, Smith & Standish, 2013) that critical thinking involves both the ability to assess the probative strength of reasons and the disposition to do so. In the first instance, possessing the ability means one has the formal training or innate possession of connecting assertions with the rules of acceptance. Such connection, whether gotten innately or through training, ensures that any thinking that passes through the test of accepted rules, is considered as critical. In other words, any claim that cannot pass the rigours of rules of acceptance cannot be regarded as critical thinking. Thus, critical thinking is purely evaluative and the rules it adapts to are technically provided and studied in Logic which is a branch of philosophy. This is why Ogunyemi (2016) construed critical thinking as the ability to establish a proposition on the basis of logic and analysis.

In Logic, rules separating valid reasoning from invalid ones; sound arguments from unsound; and detects errors in reasoning technically called fallacies, are given utmost consideration. We shall return to this shortly. The second aspect of our deduction from the definitions proffered by scholars is the disposition of critical thinking. It is one thing to have the ability to do critical thinking; it is another thing to be willing to use the ability. Such disposition, according to many critical theorists, may include open-mindedness; fair-mindedness; independent-mindedness; inquisitiveness; and mutual respect in group inquiry (Blake, Smeyers, Smith & Standish, 2013). Critical thinking thus involves two principal things: Ability and Disposition to use the former. From the foregoing, therefore, critical mindedness can be conceptualised as the capacity of a mind to have the ability and the disposition to engage in critical thinking.

4 Logic and Critical Mindedness

Logic, coined from the Greek word – *logos* – meaning 'reasoned discourse', is simply an art of correct reasoning. Wallace (1977) defines it as the art of sound discourse; the science of good reasoning; and the science of the laws of thought. Marcel (in Onyeocha, 1996) describes it as an intellectual habit or virtue that strengthens the mind for its characteristically human operation – that is, reasoning or understanding and judgement. Logic is a study which enhances clarity of thoughts and systematization of principles needed for philosophical reasoning. It is a study which analyses the nature of correct reasoning in accordance with some logical maxims.

Logic helps people to make opinions well-stated, clear, well-articulated and properly backed up with rational, consistent, coherent, precise and cogent propositions. Logic, the art of reasoning, and a branch *cum* tool of philosophy, ensures and facilitates the attainment of persuasion, conviction and criticality. When someone supports a belief by giving a reason for accepting the belief, he or she has given an argument. Setting forth arguments is the most basic philosophical activity and is one of the activities which distinguish philosophy from merely having opinions. For instance, if l say "Education graduates are pedagogically trained. Jenkoku is an education graduate. So, Jenkoku is pedagogically trained".

Here, one has not only stated a case, but one has given good reasons for my case. It is logic that is primarily concerned with the relation between the beliefs expressed and the reasons given as evidence for them. Since not all reasons are good, logic determines if the reasons given are good enough to sustain our beliefs. Logic is thus concerned with the relation between evidence and conclusion. It is *the art of sound and critical reasoning* and it helps in making valid arguments, consistent, coherent and non-contradictory propositions.

Humanity is notorious for its cleavage to assumptions about myriads of events or phenomena which we experience in the world. Some of such assumptions are grossly unfounded, and thus, capable of misleading people. The study of logic is instrumental in the separation of these assumptions from clearly thought-out and well-founded convictions about realities in life. It therefore enhances critical attitude towards assumptions and other experiential aspects of reality (Olusanya, Akinsanya & Osiyemi, 2016). In this vein, Logic exposes the student to rules validating reasoning, such as the *rules of inference and replacement*. Some of these rules are: Modus Pollens, Modus Tollens, Conjunction, Addition, Simplification, Absorption, Hypothetical Syllogism, Conjunctive Syllogism, Disjunctive Syllogism, Simple Constructive Dilemma, Complex Constructive Dilemma, Simple Destructive Dilemma, Complex Destructive Dilemma, Association, Commutation, Double Negation, Exportation, Distribution, Transportation, Tautology, Material Implication, Material Equivalence, De Morgan. When arguments fail to conform to the above stated rules, they fall into the category of errors in reasoning which are classically regarded as *fallacies*. These errors could be as a result of our state of mind, or are deliberately made to score a point or to avoid being defeated in arguments.

Logic helps to detect such errors and avoid them in our reasoning. Fallacies are errors in reasoning which are capable of misleading people. An argument may appear sound or plausible, but in actual fact defect from the rules of reasoning or inference. Such an argument is termed fallacious; that means the reasoning process which led to the formulation of the argument is faulty. There are formal and informal fallacies. Formal fallacies occur in a deductive argument when we wrongly assert or claim an implication or logical relationship when it does not exist in an argument. They are errors resulting from misapplication of logical principle. These are: Fallacy of affirming the consequent (which occurs when the rule of inference called Modus Ponens is violated) and Fallacy of denying the antecedent (which occurs when the rule of inference called Modus Tollens in violated). The informal fallacies, on the other hand, are not based on any prescribed logical form; rather, it is about the content of an argument, which though incorrect, is nonetheless persuasive. These are: ambiguity, relevance and presumption. The types of fallacy of ambiguity are equivocation, amphiboly, composition, division, and accent. Fallacies of relevance are: Appeal to Force (Argumentum and Baculum), Fallacy of Attacking the Person (Argumentum ad Hominem), Tu quoque, Appeal to Authority (Argumentum ad Verecundiam), Appeal to Pity (Argumentum ad Misericordiam), Appeal to popular opinion (Argumentum ad Populum), Argument based on Ignorance (Argumentum ad Ignorantiam), Fallacy of Irrelevant Conclusion (Ignoratio elenchi), Red Herring. Fallacies of presumption are: Complex Question, Fallacy of False Cause, Petitio Princippi (Begging the Question), Accident, Converse Accident (Oladipo & Akinsanya, 2006).

By and large, logic helps in making opinions well-stated, well-articulated and properly backed up with clear, rational, consistent, coherent, precise, rigorous and cogent. More importantly, it helps the student and the teacher to develop a critical and probative mind-set. Its study fosters critical thinking which inadvertently result to creative mindedness. This is why it is always recommended for students of law, political science, management, among others. It also explains the rationale behind its inclusion in national policy on education, as one of the general studies that every Nigerian university student must pass through before graduation (FGN in NPE, 2013). But the question here is: how have management of universities and the handlers of the course used it to foster the virtue of criticality in the Nigerian child? Has the course really been taught in a way that the Nigerian student could become critical minded? We shall return to these questions shortly.

5 Creative Mindedness

Creative mindedness is the capacity and disposition of a mind to engage in creative thinking or creativity. It is the ability and willingness of a mind to produce either of two things – something from nothing, or something from something. In the former case, the mind produces something entirely new, original, novel and radically different from the status quo. This was the kind of minds that led humanity to new orientations about education; new methods of teaching; new imaginations on educational processes and new theories, new perspectives, new presuppositions. Through creative minds, the idea of schooling itself was birthed by Greeks and Africans along the Nile; the Sophists invented peripathy; Socrates originated dialectics; Aristotle became hypothesized and later became the precursor of experimental researches (in education); Pestalozzi produced instructional materials and discouraged rote learning; Froebel delivered play method of teaching; Dewey projected a pragmatic/functional education and project method; Montessori invented a method of teaching which propels the child towards self-reliance; *inter alia* (Akinsanya, 2015).

The second creative mind produces something from something. In this case, rather than producing something entirely new, there is a tinkering with the 'existing product'. It is a form of modification or re-branding of the *status quo*. Such re-branding comes to play in Kilpatrick's renaming of Dewey's problem method to project method; refashioning of Rousseau's and Pestalozzi's naturalism to Froebel's Kindergarten schooling, *etcetera*.

Whether it is in the first sense or second sense, the creative mind is always generative, innovative, imaginative and inventive. It is, in the words of Torrence, an adventure into being:

sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying difficulties, searching for solutions, making guesses or formulating hypotheses on deficiencies, testing and retesting these hypotheses and possibly modifying and retesting them, and finally communicating the result (Torrance, 1962).

6 Aesthetics and Creative Mindedness

What is the relationship between Creative mindedness and Aesthetics? The answer to this question is very simple, but before such questions is answered, we need to attempt a definition of aesthetics since the other concept, creative mindedness has been duly explored. Aesthetics, etymologically, is derived from a Greek word – *aesthetikos*, which means perception. It is the philosophical study of art and of value judgments about art and of beauty. It is an aspect of philosophy which studies the works of art; the process of producing and experiencing art. It also considers certain aspects of nature outside the field of art, especially those which can be considered in terms of beauty or ugliness in form or quality. Aesthetics, generally, studies values in relation to beauty and appreciation.

Aesthetics and creativity are so connected and intertwined. Beyond the appreciation of art, the study of aesthetics predisposes the mind of the learner to creativity, innovation and improvisation. Brinkmann & Sriraman (2008) of the University of Muenster, Germany and University of Montana, USA respectively, in an article titled *Aesthetics and Creativity: An exploration of the relationships between the constructs*, examined the relationship between aesthetics and creativity among working mathematicians in USA and Germany. They discovered that aesthetics is an important component of mathematical creativity. According to them, many working mathematicians conveyed a reciprocal relationship between aesthetics and creativity, particularly when mathematical results and proofs are arrived at with considerable strain and stamina. Their research was quantitative, with the use of research questionnaire and interview guide. Among some research questions set up for the study conducted by Brinkmann & Sriraman (2008), *Research question III: Is an aesthetic appeal necessary for creative work?* Generated results which confirm that the aesthetic appeal plays a crucial role in the creative work of contemporary mathematicians. The researchers found out that the aesthetic component need not necessarily derive or be connected to a theorem or proof that the mathematician is currently working on, which can more often be one of sustained trial and frustration, but aesthetics is often present in appreciation of other results, reading elegantly presented material in books as well as listening to lectures from peers. They also observed that even though aesthetics had been relegated by some mathematics education researchers as a small component of the affective dimension of learning, in actual fact, it intertwines with both the cognitive and affective components, and it is an important aspect of creativity, as indicated by their study. In support of Brinkmann & Sriraman (2008), Sinclair (2009) argues convincingly that aesthetics is the missing gap in numerous failed attempts at motivating students. Given the numerous reform movements in mathematics education that have occurred in many parts of the world, and the call to view school students as budding mathematicians and to get them engaged in mathematical thinking, it is ironic that aesthetics has not received more attention by the community of mathematics educators. Brinkmann & Sriraman thus conclusively made a case for emphasizing the aesthetic dimension in mathematics education in particular, and education in general.

Another scholar, Sawyer (2000) made explicit the relationships between improvisation (as form creativity) and aesthetics by leaning on Dewey's work on *art as experience* and Collingwood's work on *art as language.* He argued that at the core of both Dewey's and Collingwood's theories, is a theory of art as improvisation. By focusing his discussion on improvisation, he brought out aspects of Dewey and Collingwood which have been neglected in most commentaries. Collingwood and Dewey both made explicit the implications of their theories: *that all language is aesthetic.* Collingwood for example stated that "every utterance and every gesture that each one of us makes is a work of art" (cited in Sawyer, 2000), and he acknowledged that his theory of art entails that many everyday activities are aesthetic. Basically, for Sawyer, both Dewey and Collingwood have developed theories of art as improvisation by focusing on creativity *via* aesthetics.

The knowledge of aesthetics, by and large, helps to bring out learner's creativity and makes him assess things more intelligibly. It helps to develop learner's mind towards sensibility and creativity. It prods the learner to develop the capacity to improvise, to invent or re-invent the wheels, to create or re-create, to mould or re-mould, and to give birth to what had not hitherto been in existence. Aesthetics simply initiates the learner into becoming creative-minded.

7 Fostering Critical and Creative Mindedness in Nigerian Pedagogues

The Federal Government of Nigeria in the National Policy on Education (2013) presents so many goals ranging from the pre-primary level of education to tertiary level, and of course teacher education sector. It would appear that to develop critical and creative capacities in the child assumes the most important goal among others. Even in other climes, as indicated by some scholars in their various works, the above goal appears to be the primary aim of education. Bailin & Siegel (2013), for instance, considers critical thinking as a fundamental aim and overriding ideal of education. In fact, for the duo, educational activities should be designed and conducted in such a way that the construction and evaluation of reasons (in accordance with relevant criteria) is paramount throughout the curriculum. Their position does not reduce other aims and ideals of education as unimportant, but that none outranks the primary obligation of educational institutions and efforts to foster critical thinking. Another scholar, Scheffler (cited in Bailin & Siegel, 2013) asserts that critical thinking is of first importance in the conception and organisation of educational activities. All efforts dissipated in the school should be geared to producing a critically-minded individual. There is wisdom in the point raised by these scholars – an educated mind who does not possess the acumen to sieve the grains from the chaffs; to remove sense from nonsense; to identify facts from fables; to separate sound ideology from mere propaganda; to split truth from falsehood, and valid reasoning from fallacies – is *ipso facto* a caricature of education. In fact, such a mind is a colossal and monumental embarrassment to education. An educated person should be critically minded and critically alert.

Siegel (1988) offers four reasons for the rationale behind making the goal of critical mindedness at the heart of educational activities. The present writer adopts these reasons; they are presented thus:

- First, striving to foster critical thinking in students is necessary if they are to be treated with respect as persons. Treating students as persons is a moral obligation which requires that they are well trained to competently think for themselves and make good decisions on all aspects of their lives. (This is actually the main goal orchestrated in existential education - confer Akinsanya, 2015). To be able to do this, it requires some judgement in accordance with the criteria governing critical thinking. Hence, treating students with respect requires fostering in them the abilities and dispositions of critical thinking.
- The second reason for regarding critical thinking as a fundamental educational objective entails education's generally recognised task of preparing students for

adulthood. Such preparation should not be understood in terms of preparing the student for pre-conceived roles, but for self-sufficiency and self-direction.

- The third reason concerns the role critical thinking plays in the rational traditions that have always been at the centre of educational activities and efforts – mathematics, science, literature, art, history, etc. These traditions rely heavily on critical thinking; mastering or becoming initiated into the tradition is basic to the fostering and enhancement of critical thinking.
- The fourth and last reason, for Siegel, involves the place of critical thinking and analysis in democracy. Since democracy is Nigeria's chosen ideology as reflected in the 1999 constitution and even in the National Policy on Education (2013), patterned after Siegel's country's version (America), educators must be committed to the fostering of the abilities and dispositions to critical thinking. Democracy can only flourish when citizens are trained to reason well concerning political issues and matters of public policy, scrutinize the media and meet the demands of democratic citizenship, many of which require the abilities and dispositions constitutive of critical thinking.

So much talk on critical thinking, let us quickly consider creative thinking. Why do we need to foster the habit of creative thinking in the Nigerian pedagogue? There are of course so many reasons, but the writer will highlight only three, for page constraints.

- First, some theories of learning, some methods of teaching, some educational practices, some policies and styles of managing education, handed over by our forebears are fast becoming obsolete and inadequate given the complexity and sophistication of the present generation. It will take some creative minds to replace the afore-mentioned with new order which will make education readily useful and useable for coping with today's challenges, peculiarities and idiosyncrasies. The Nigerian pedagogue has no choice than to fit in.
- Second, at the moment, there are many innovations emanating from other climes, especially from Asian classrooms, on how to better engage the child in the classroom. The Nigerian pedagogue cannot afford to be left out; he cannot afford to remain as a consumer of innovations in pedagogy from other teachers in other world. He must also produce something that others can benefit from. He has to be creatively minded.
- Third, a creative mind helps the teacher in the area of improvisation, as demonstrated earlier on. Such improvisation is highly needed in the area of teaching aids or instructional materials. Akinsanya (2008) has pointed out that for easy and better teaching to meet up with faster and deeper learning, every teacher worth the name, must employ the use of instructional materials in the classroom. As important as these materials are to teaching-learning interaction, they are not readily available and affordable given the economic situation in Nigeria. This is where improvisation comes in. The Nigerian pedagogue must manage the scarce resources at his disposal and make some improvisations in

the realm of teaching aids. This can be readily done through commitment to creative mindedness.

By and large, then, to make a child become critical and creative minded, the handler, that is, the pedagogue, has to first and foremost imbibe the two habits, *nemo dat quod non habit* – no one can give out what he/she does not have. When you see a brilliant student, just look for the brilliant teacher who is responsible. This is the crux of this paper – that the pedagogue has to be trained to be critically minded and creatively minded. Such a critically and creatively minded pedagogue could thereafter foster the dispositions and the skills in the Nigerian child, who would later take the Nigerian society to the next level.

8 Infusing Criticality and Creativity into Teacher Education via 'Logic & Aesthetics'

The question which is inevitable at this point is a query on the role Philosophy & Logic has been playing in fostering the spirit of criticality and possibly creativity on the Nigerian University graduate. The Federal Government of Nigeria in the National Policy-document on Education (2013) indicates that every Nigerian university student shall be made to pass through philosophy and logic as a general study (GNS), to develop in the child some critical capacities. Despite this inclusion, can we confidently say that the Nigerian graduate, who must have passed through such a course, is *de facto* critically and creatively minded? The answer to this question is an emphatic NO. Experience and observations have shown that most of our graduates lack the habit of criticality and creativity. This thus shows that there is a problem which needs to be arrested and addressed headlong. To address this problem, the present writer proposes the following options:

- Infuse an entire new course 'Logic and Aesthetics' into the curriculum of Faculty/Institute/College of Education students. This course shall be meant for only education students who have been hitherto in this paper referred to as prospective teachers. The content of 'Logic & Aesthetics' shall comprise items which could predispose the education students to acquiring the habits of critical and creative mindedness. Such course will be made mandatory for all education students at a much matured level, say 300level, and taught only by professionals in training and experience.
- Second, the infusion could again be done by strengthening the existing course on philosophy of education through enriching the course, and making it independent and mandatory. The recent Benchmark Minimum Academic Standards for Undergraduate Programmes in Nigerian Universities, published by National Universities Commission (2007), which merged philosophy with other foundations courses (sociology of education, history of education, psychology of education and comparative education) into Foundations 1 & 2

has not helped matters at all. Indeed, the attempt to reduce the number of subjects in the training of education graduates is lofty, but fraught with some challenges. In the above mentioned merge, for instance, justice is not done to the discharge of each of the various subjects that had been collapsed. Incidentally, these collapsed subjects are so germane to the training of a thorough-bred educator. Hence, with the present merger, philosophy of education is not handled, due to time constraint, in a way that the prospective teacher could imbibe the critical and creative spirit which is possible *via* enriched course content.

- Modifying the existing general course on 'Philosophy & Logic' into 'Philosophy, Logic & Aesthetics', and enriching the content in such a way that it could instil criticality and creativity in every student. This means that the nomenclature should be modified to include aesthetical studies; and the content should also be modified to reflect items which are logical and aesthetical, and which could foster the habit of criticality and creativity on the consciousness of the prospective teacher in particular, and all students in general.

The above alternatives are proposed for the stakeholders in Nigerian education to ponder upon and decide which of the choices is most preferable, considering some peculiarities and idiosyncrasies.

9 Evaluation

The Nigerian child is not a computer meant to store information. He ought to be trained to become critical about the information given during teaching-learning interaction and elsewhere. This helps him to process such information rather than merely storing it. The child also needs to be creative-minded so as to replace the old order and showcase innovations in the midst of innovations from other nations. It was however discovered in this write-up that the child cannot become critical and creative minded if his teacher has not first internalised and imbibed the two habits. The Nigerian teacher has to be trained to be critically minded and creatively minded. Such a critically and creatively minded teacher could subsequently inculcate the habits in the Nigerian child. This paper thus concluded by considering the options that could be used to infuse criticality and creativity in the mind-set of the Nigerian pedagogue and of course subsequently, the Nigerian child.

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Emerging Technology Mediation among Pre-service History Teachers at Makerere University

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Abstract. General pedagogy in higher education is constrained in terms of creativity and innovation. In the area of History Education, many teachers view history as a single accurate story about the past so they are slow in embracing dialogic and inclusive pedagogies that are mediated by emerging technologies (ETs) that can bring interpretation of the past in conversation with the present. This may become an impediment to improving the quality of learning since today's students need to be taught using ETs that are aligned with the way they learn and think. Therefore, this study sought to support students' participation in doing history mediated by ETs. Data was collected using interviews and observation from an educator and 20 pre-service teachers at Makerere University. The data were analysed through a Hermeneutic cycle-driven analysis. The findings revealed that historicity is constructed through active engagement in doing history by interpreting images, videos, pictures and texts as relics from the past afforded by ETs. Dialogical approaches to learning history through open conversations between the educator and students embedded by ETs helped the pre-service teachers to learn in a democratic way. If utilized this will be relevant to the pre-service teachers' future students.

Keywords: Teacher training; Emerging technologies; Pedagogy.

1 Introduction

History pedagogy in secondary schools (Trskan, 2012) and at the university (Maloy & LaRoche, 2010) has been overtly based on the memorization of names, dates, places and facts (Bain & Mirel, 2006; Savich, 2009; Sebastian, Cosme, & Jorge, 2014), where teachers give oral accounts of the main events, note points on the

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chalkboard, and draw content primarily from text books geared at passing examinations (Keating & Sheldon, 2011; Trskan, 2012; Voet & De wever, 2016; Odendaal, 2017). The prevalent use of didactic approaches in the history classroom (Maloy & LaRoche, 2010) is characterized by student belief that the teacher is the only source of knowledge (Trskan, 2012) and viewing history as a single accurate story about the past (Cochran, 2010). It is, therefore, not surprising that today's students feel detached from learning about the *uncontextualized* knowledge of past that does not relate to their everyday lives (Apostolidou, 2012; Stockdill & Moje, 2013; Harris & Girard, 2014; Voet & De wever, 2016).

In this paper, we propose a democratic participation (Barton, 2015) of the educator and students in doing history mediated by the affordances of ETs. In the context of this research, students will synonymously mean Pre-service teachers and participants.

1.1 Emerging Technologies

Embracing the use of ETs in History Education provides an opportunity to link the past to the present and can be a way of convincing students that they can participate interpreting the past as it is vital and relevant in their lives (Kuo, Song, Smith & Frankin, 2007; Haydn et al., 2015; Odendaal, 2017). In this paper, we conceptualized ETs as tools, ideas and advancements utilized in varied education settings to serve varied education-related purposes (Veletsiano 2010; Ng'ambi, 2013). Examples of such ETs are social technologies like Blogs, Wikis, Skype, Facebook, and WhatsApp that can potentially facilitate sharing of history content between educators and students. Although researchers (Lee, 2002: Haydn, 2011: Hillis & Munro, 2005: Haydn & Barton, 2006; Zin Yue & Jaafar, 2009; McCall, 2013; Warnich & Gordon, 2015; Haydn et al., 2015; Odendaal, 2017; Vander Merwe & Horn, 2018 & Sebbowa & Muyinda, 2018) have integrated ETs in the teaching and learning of history at different contexts. While, other researchers have engaged in doing history through creation of digital archives (Bolick, 2006); teaching historical contextualization (Havekes, Coppen & Luttenberg, 2012) and gathered and interpreted data from primary and secondary sources (Levstik & Barton, 2011). We argue for doing history through enabling both the educator and students to participate in attaching meaning to the past mediated by ETs. Thus, we sought to investigate how historicity is constructed on an ET platform among Pre-service teachers at Makerere University?

1.2 Historical Hermeneutical Theory

We engaged with the historical hermeneutics theory (Gadamer, 1975) key theoretical construct, historicity to give us the language to understand the process of interpreting and doing history mediated by ETs. Moreover, historicity is conceptualized as a true understanding of the past achieved through dialogical interpretations and participation in doing history to make sense of the present with an anticipated future (Gadamer, 1985; Gjesdal, 2015). Historicity constantly reminds us about the importance of our traditions, cultures, imaginations and language in trying to make sense of the present, thereby remembering the injustices of our past and trying to fix them as we move into the future (Gadamer, 2004; Porter& Robinson, 2011). Every sense of the present is shaped by the past or tradition (Gadamer, 1975; Fairfied, 2015); if we did not have the past there would be nothing to determine the present and influence the future. This is suggested in Gadamer's sentiments below;

> "Long before we understand ourselves through the process of self-examination, we understand ourselves in a self-evident way in family, society and the state in which we live." (Gadamer, 1975:276)

It can be inferred from Gadamer's sentiment that, today's students can participate in the meaning making process of the past events. For example, in this research, students were required to participate in doing history by sharing multiple sources such as texts (journal articles, newspaper extracts, audios, video clips, pictures and images about their families and cultures (see for example, Figure 1). Hence, by actively participating in collecting, retrieving their family/cultural history and sharing with others, students were able to interpret, appreciate, and identify with the past while aligning to its relevance in the present. The rationale for sharing their cultures was important in making them feel part of their own history, family and tradition. To this end, Seixas, (1996) argues that family history gives students a chance to learn about the past in a way that is meaningful to them as it connects to their lives. Comparably, Gadamer asserts that understanding of tradition is achieved through obtaining family history (Abadía, 2011). As earlier illuminated in this paper, the key construct of historicity influenced the understanding of framing the key question; how historicity is constructed on an ET platform among Pre-service teachers at Makerere University?

2 Methodology

A qualitative case study design was employed bounded by time and context at Makerere University, School of Education and more specifically among third year Pre-service teacher (Yin, 2003; Miles, Huberman, & Saldana, 2014). These cohorts of participants were pre-service teachers who took history as one of their teaching subjects. Subsequently, as educators teaching the History methods course, we requested the pre-service teachers interested in participating in the doing history on the ET platform to register their names. Out of the History Education class of over 100 students, only 20 participants voluntarily joined the ET platform comprising of; three Post Graduate Diploma students, eleven second-year students and six third-year students. Thus, voluntary participation was advantageous for the following reasons: firstly, those undertaking history could engage at a higher thinking level, comprehend and debate various history concepts and issues aligned to the pedagogic context. Secondly, following the pragmatic and technical perspective, in that this research needed someone who had an interest in using Internet-enabled devices and mobile phones leading to their more likely use of social media tools such as Facebook, Twitter, Wikis, Blogs and Whatsapp (Sebbowa, Ng'ambi & Brown, 2014).

2.1 Face-to-Face Workshop

The volunteered participants were invited for a face-to-face workshop in the School of Education where they were requested to create accounts on the ET platform with the help of the laboratory technicians. To this end, Moule (2007) and Mokoena (2013) advise online facilitators and teachers that technical guidance is always needed during online learning. We observed student-student interactions during the workshop as peers kept on asking each other questions about the ET platform, and also consulted the educator. For further guidance, we requested the participants to refer to the ET user guide on the site and also play the video clip uploaded on the platform for further guidance. At the workshop, one participant from third year proposed a topic, Ethnicity in Uganda, suggesting that it would help participants identify with their own cultures while appreciating other people's cultures. This topic was also deemed important because it is covered under the Ordinary level history syllabus in Uganda. The participants would get a chance to share the history of their own families/cultures.

2.2 Data Collection

Qualitative data was collected from semi-structured interviews and participant observations on the ET platform where participants (A1-A20) were required to share names, year of study and as well as post images, video clips, newspaper extracts, journal articles and pictures their culture/family history (see Figure 1). The rationality for sharing visual historical artefacts was to facilitate the analysis of all the data from the historical sources, post interpretations, receive comments, questions and responses from their peers with supplements from the educator mediated by ET as contemporary tools visible in the present. To this end, doing history through dialogic constructions of historicity would be afforded by the potentials of ET. Consequently, interview guide consisted of 17 question items focused on the key research question and was conducted within 30-45 minutes. The place and setting for conducting the face-to-face interview was with-in the office space as participants suggested it had less interference and minimum noise. The interview process was audio-recorded (with the consent of the interviewees) to maintain a level of accuracy and richness of the data. For triangulation of data, interviews and observations were later transcribed and analysed in alignment with the research question highlighted in the preceding section.

2.3 Data Analysis

The theory-driven analytical approach particularly the concept of hermeneutics cycle driven analysis was adopted for two reasons. Firstly, hermeneutic cycle driven analysis provided a systematic language and process for gaining understanding and interpretation of the texts constructed in this research (Fleming, Gaidys, & Robb, 2003, Turner, 2003). Secondly, this form of analysis was relevant in trying to get the actual communication of the author as a part without misunderstanding the text viewed as the whole (Porter & Robinson, 2011). Therefore, hermeneutic cycle driven analysis majorly focused on the cyclic interpretation of the whole and the parts, also referred to as the part-whole method (Gadamer, 1985). Subsequently, the hermeneutic cycle focuses on dialogical understanding of the text as a whole and the interpretation of the parts in which descriptions are guided by anticipated explanations (Gadamer, 1975: 117). Hence, to ensure a systematic analytical framework, I focused on the themes arising out of the data, provided an example of such data in form of an extract viewed as the part and then explained the whole phenomenon in relation to historicity as a theoretical construct and the research questions (following theme-extract-explanation).

3 Findings and Discussion

The students shared their online identities by choosing how they wanted to be known online (Figure 1).

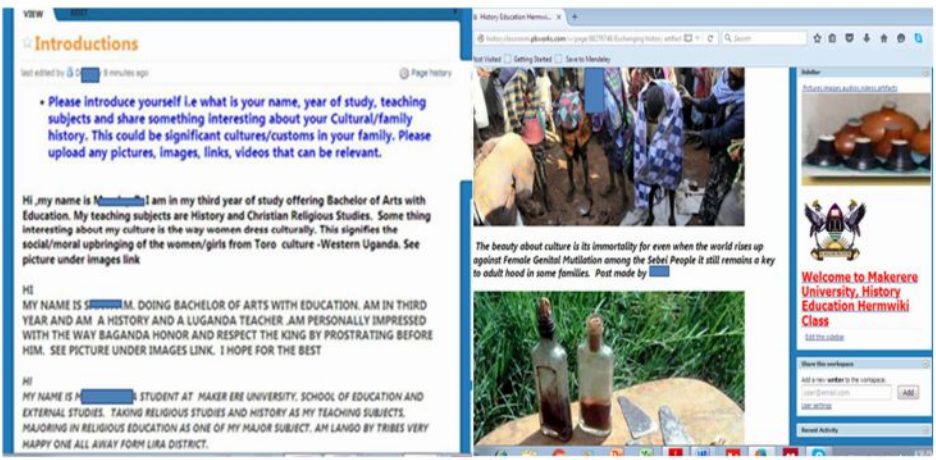

Figure 1. Online Introductions

In Figure 1, students' names are blanked (colour blue) out to ensure their anonymity. Twenty participants shared highlights about their family history by mentioning tribe, origin and something significant about their culture, while only seven uploaded images about their cultural history. The small number of image uploads could be because some participants felt shy to upload family history images, some cultural relics (representations of the past) are not available in electronic format while others might have been challenged in uploading images and videos due to internet fluctuations. Therefore, observational findings suggested that students shared online identities and family histories for ease of interaction and understanding each other on the ET platform. These findings are evident in Gadamers' qualitative sentiment (highlighted preceding section) of understanding self through the family and state (Gadamer, 1975).

Moreover, the findings suggested that students' needs aligned to sharing their family history provided a significant aspect of following (their thinking) what they know in the present while moving back to the past. Thus, by sharing family history students felt part of the history academic disciple through participating in the meaning-making process and thus eliciting the relevancy of studying the past in the present situation. Thus, integrating the study of family/culture history in the academic version of the Uganda history curriculum would absolutely provide a partial solution to the underlying study problem of todays' students finding history boring and irrelevant because they feel detached from it, although the shared views about cultural and family history were obtained from a case of 20 students, who might not ably represent all students taking history as a teaching subject at Makerere University. These qualitative findings provided useful insights that might be applicable to similar contexts and were relevant in improving pedagogical processes.

In corroboration with the above findings, Interview findings with qualitative sentiments represented from three interviewees, who were aligned to the current situation while also focusing culture to a global perspective as follows:

> 'I appreciate my culture as it proves my historical heritage; I believe our original cultures should be preserved through aligning the traditional with modern cultures ushered in today by technology and modernization to avoid cultural erosion.' (A2).

While another reiterated that:

> 'As a historian, I felt enriched to read about other people's family history that enriched my knowledge scope. Also, there is a linkage to the present situation; for everything, there must be a root; it may have undergone changes but there is a big linkage with the past.' (A7)

Another participant disagreed with some cultural practices:

> 'While I love the idea of cultural heritage, I disagree with some cultures like the Sabiny culture of Female Genital Mutilation; some cultures in Northern Uganda where people [a man and a woman] fight before they get married. Such cultural practices do not show respect for human rights.' (A11)

The interview sentiments above revealed an appreciation and respect of different cultural heritages. The statements suggested close alignment between cultural practices and contemporary phenomenon. Therefore this was indicative of cultural history as an important aspect that ought to be preserved through different generations. For example, student (A2) used the phase, 'original cultures should be preserved'; aligning traditional with modern cultures ushered in today by technology.' The perception of the student was such, while some people may not understand the relevancy of certain cultures today. She believed no form of cultural belief should be diluted but instead they should be aligned to modernity by using technologies that are available and accessible at different contexts. In agreement with the student's view, we argue that original cultures can be preserved and communicated from one generation to another without being diluted or exaggerated - for example, the case of using ETs where students, educators and the community can share original pictures, images and texts from newspapers about the past, attach meaning to them in the present and also invite other stakeholders to contribute their views. This could be a great move towards preserving culture while ushering in technology and modernization, as reflected in the students' sentiment above.

That said, student (A11) acknowledged that while she loved the idea of cultural heritage, she disagreed with some inhuman practices that did not 'respect human rights.' We strongly believe that cultures should be preserved and human rights respected. Our argument is that human beings should be at liberty and should not be subjected to any cultural practices that deprive them of their freedom. In agreement with this, the historical hermeneutics philosophy guiding this research attested to embracing culture, tradition and history by changing and altering them to make them relevant to one's context and desires (Gadamer, 2004: Regan, 2012).

Thus, this paper apprehends the need for teachers/educators to connect to where students are in the present, potentially afforded by ETs and social media that today's students are passionate about. This approach is viewed as critical in today's study of history (Sebbowa et al., 2014) because it affords a process of enabling active participation in doing history through exploiting Wiki technologies that connect to today's students (Maloy et al., 2010).

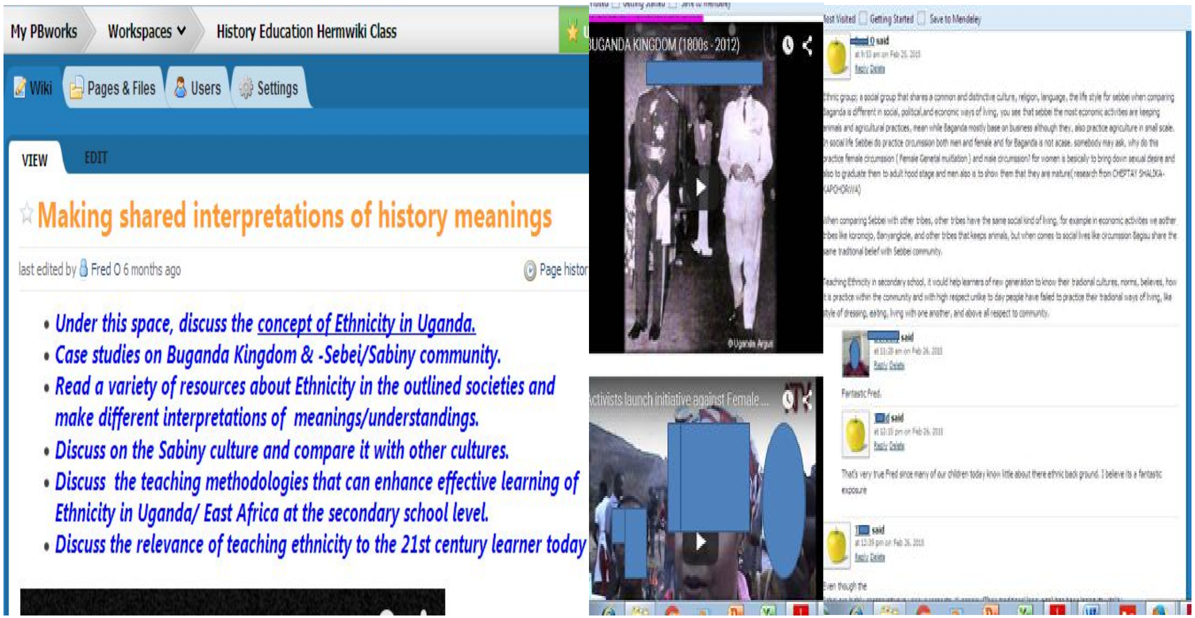

Figure 2. Doing History through Making Shared Interpretations of History Meanings

Figure 2 presents the educator's task assigned to students on Ethnicity in Uganda, teaching methodologies and relevance of teaching the topic under study as reflected on the ET platform. In response to this, students consulted multiple sources of evidence; print and electronic textbooks, information from websites, visits to historical sites, museums, reading fellow peers' posts on the ET platform, reading newspapers and interviewed elders. Moreover, they made collaborative interpretations of the underlined topic through commenting, questioning and responding to peer's posts with supplements from the educator. Thus, observational findings from Figure 2 were categorized and coded in to themes arising out of the students' responses as follows: out of the 12 participants who were observed on the ET platform, seven conceptualized ethnicity, six revealed that they would use interactive methods to teach Ethnicity in Uganda, seven revealed that ethnicity helps learners to know their origins and cultures, while eight uploaded images and videos on ethnicity, particularly from Buganda kingdom and Sabiny. However, it was observed that one student domineered and posted detailed contributions in response to the educator's task in Figure 2. On close interrogation and asking him why he did that, the student expressed a lot of interest in using ICTs to facilitate understanding in the classroom room. Correspondingly, Husbands (2003) encourages educators to engage with representations of the past littered through students' daily lives such as films, videos, audios and television as a way connecting to the present. Consequently, an analysis of two excerpts as these particularly contained words and phrases that would be relevant to answering the research questions.

Analysis Example 1

Theme*:* Ethnicity helps learners to know their origins and cultures.
Extract*: 'In this context, Ethnicity gives each individual of 21st century chance to know each belief, practices, norms and customs of different tribes through learning/ teaching.'*
Explanation: In the context of this research, students were able to construct various understandings and interpretation of the concept, Ethnicity in Uganda, as earlier highlighted. While pictures, videos and images (in reflection of the past) shared among participants proved useful resources in clarifying students' understanding, these should be applicable to the students' life and needs. This student argued that the studying, *'Ethnicity helps students of the 21st century to know each belief and practices'*. This is particularly significant in helping students establish identities and appreciation of each other's cultures. In other words, in terms of responses to the research question, historicity should be constructed in relation to the needs of the contemporary situation. Given that analysis example 1 captured the content knowledge to be taught; Ethnicity in Uganda - the following example illuminates how such content should be taught to enhance learning.

Analysis Example 2

Theme: Use interactive methods to teach Ethnicity at the secondary school level
Extract: '*I would use interactive methods like group work, field study, case study; project and role play to teach Ethnicity in Uganda. This is because they are learner centred.*'
Explanation: The above sentiment postulated that student generated approaches could potentially facilitate in-depth learning about the past. Using multiple approaches in attaching meaning to the past could enhance democratization of learning about the past and also suit students' stages of development (Roberts, 2010). For example, the student gave examples of 'field study, case study and role play to enhance learning'. This was relevant for two reasons: firstly, for providing insights and understanding on how students (pre-service teachers) can actively participate in a shared constructing of meaning about the past and thus their likeliness to use the same methods with their future students. Secondly, such approaches capture imagination, wonder and excitement as the students are practically exposed to the community (field and case studies) in which they live, thus enhancing relevancy in learning history. The historical hermeneutics philosophy attested to an engagement with dialogical approaches that involved open-ended questioning and answering between educators and students focused on linking the past to the present (Porter & Robinson, 2011). Following the presentation of results, it was evident that students successfully and actively engaged in the collaborative construction and doing history mediated by the ET platform.

In alignment with the above findings, interview sentiments were identified in relation to students' contrasting views (deviant cases) about cultural practices, as one student asserts that:

> 'African cultural practices like FGM should go on. Africans have had their cultures and Europeans have since called them, barbaric; Erosion of African culture is indirect colonialism. If a community practices male and female circumcision then it should go on with it.'(A14)

While another retorted that,

> 'I interviewed 4 Sabiny students and also attended the Seska Sebei (Sabiny) cultural meetings at the freedom square Makerere University; I wanted to aligned what is documented in books and what the Sabinys have to say.' (A11)

Contrary to the students' earlier views of banning the practice of FGM as it is seen as barbaric and thus disrespects human rights, A14's statement above suggested that such cultural practices should be preserved especially if they were accepted by the community. He used the words, '*Africans have had their cultures and Europeans have called them barbaric; indirect colonialism.*' The statement was indicative of the importance of enhancing liberty as communities make their own cultural decisions and Africanisation (African cultural traits). However, it's worth mentioning that, on 10 December 2009, the Ugandan Parliament passed a law banning the practice of FGM and the practice has since been recognized as a violation of human rights. Thus, the position adopted in this paper is a need for continuous sensitization of the communities about the ills and effects of such cultural practices. The analysis suggested that students were able to learn to participate in reconstruction and 'doing history' through reading, interpreting and analysing multiple sources of evidence. Belanger (2011) argues that a critical aspect of doing history is to understand that history is a matter of weighing different sources evidence and making informed interpretations.

It was explicitly revealed that participants viewed family history as a means of cherishing cultural values, appreciating each other's cultures and heritages, sources of identity, preservation of culture, while also exhibiting an awareness of diversity among cultures. To this end, Seixas (1993) argues that family experiences and cultural values are more important in shaping the students' understanding of the past other than any other source of historical information. Thus, this research has demonstrated that students' interest can be aroused through linking the study of the past to their daily lives in the present. Also evident in this research was the desire for students to share and preserve their culture (avoid cultural erosion) through blending tradition with modernity. Such views are important as they are geared to attending to students' interests and thinking about the past. In support of this view, Seixas (1993) argues that attending to students' pre-understanding of historical knowledge, based on their families and cultural inclinations could afford understanding of the relationships and differences between their families and communities and thus bridge a sense of unity and brotherhood other than diversity. However, the contradiction in including students' views about sharing their family history in the curriculum is that they are, in most cases, subjective and biased. To this end, Seixas (1993) suggests that if family history and cultures are to be appropriately integrated in the study of history in schools or at higher education institutions, there is need to provide a strict rules and procedure, and multiple understandings stipulated in the curriculum. Seixas further asserted that, there will be no means of assessing the many of myths and distortions that students might present.

4 Conclusion

Historicity was constructed through active engagement in doing history through making sense to images, videos, pictures and texts obtained from the past. For the purposes of this paper, doing history was described as actively and collaboratively sharing images, videos, and texts from the past and making sense of them through dialogical conversations on the ET (as lenses from the present). Doing history in this sense therefore attracted students to participating in the co-construction of the past by making use of ETs. However, it worth mentioning that some limitations were recorded during the research such as utilization of primary sources like visits to sites proved to be expensive, ET login challenges, Internet fluctuations were a great impediment to construction of history meanings, and some students were slow and could not ably cope with the dialogical conversations on the ET platform. Therefore, there is need for continuous trainings and refresher courses for students and educators; technical and infrastructural support should be provided if ETs are to be successfully integrated in pedagogical practices.

Consequently, in order to make learning about the past relevant to learners, one must link history to students' interests and what they know in the present to move back to the past, i.e. reviving their heritage and cultures. Appreciation of each other's', families, cultures could bridge a sense of unity and brotherhood other than diversity. This might possibly reduce on the problem of cultural conflicts in the present situation and, with a projection of that understanding on what the future might be like. Historicity was also constructed through dialogical learning approaches such as group discussions, field visits, and questioning and answering as conversations between students and teachers with a focus on the past and the present, thus aligning students to historical thinking. Therefore, we argue for inclusive and democratic participation (Barton, 2015) between educators and students in the process of constructing history meanings mediated by ETs as the way in which today's students' learn. Such shared interpretations of historicity between the educator and the students provide meaningful and creative insights to innovate history pedagogy relevant to the 21st century.

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Constituents' Participation and Commitment to the Governance Process of Universities in Ghana

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Abstract. This study investigated the governance system of universities in Ghana. Emphasis was put on constituents' participation and commitment to the governance process. The explanatory sequential mixed method approach informed the study. Using questionnaire and interview, data was collected from 35 leaders and 465 members of various constituencies who were drawn from four public and two private universities in the country. The data was analysed using hierarchical multiple regression. The study revealed that whenever constituencies participate in the governance system of the university, it influences their satisfaction with and commitment to the university. Therefore, it is recommended that university managers ensure a congenial participatory governance environment—to motivate constituents to be committed to their universities.

Keywords: Governance; Participation; Reform.

1 Introduction

Participation in university governance has become a popular debate in the last two decades (Carey, 2013). As a result, policy makers in most countries are ensuring that they improve their governance system through equal representation and fair participation. Countries have formulated and implemented some legislative changes and provisions on public and private universities with the aim of improving governance in these institutions (Bratianu & Pinzaru, 2015). Particularly in Ghana, governance issues such as; size and composition of university councils/governing bodies and their roles, responsibilities and financing have been discussed in several higher education policy reports (National Accreditation Board [NAB], 2015). These

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reports have laid much emphasis on the decision making structures and processes within these institutions. The structures and processes give fair representation and participation to all stakeholders (NAB, 2015). However, there is perceived unfairness in the decision making process, with regard to participation, at the detriment of junior staff and members of the universities (Saani, 2015).

According to Elele and Fields (2010), the responsibility for decision-making in universities has traditionally been in the hands of mainly senior members, both academic and non-academic. However, the complexities of tasks performed by universities require full participation and interdependence among the various constituencies within the institution. These constituencies include; administrators, faculty members, students, and members of the support staff. As beneficiaries of campus services, constituencies must become actively involved in university governance system, since their involvement and participation in the system can help boost their satisfaction and commitment to the universities (Carey, 2013; Dela Cruz & Jimenez, 2015).

In recent times, there has been some level of attention given to students and faculty with regard to their involvement and participation in university governance (Akomolafe & Ibijola, 2014). As a result, constituencies' participation and involvement in the governance system of universities has, therefore, become an institutionalised and expected right. Even though research supports the value of constituencies' participation in governance, on-going participation of constituencies is acknowledged as problematic in that it simultaneously offers benefits and challenges (Ibijola, 2014; Saani, 2015; Wainaina, 2015). Therefore, a better examination of the consequences of constituencies' participation in university governance is required if we are to take full advantage of its potential value within the Ghanaian cultural context.

Most medium and long term development policies of Ghana, with regard to education, aimed at expanding access to university education with an emphasis on science and technology courses (NAB, 2015). This target will be attained through the contribution of constituents within both public and private universities. Therefore, research on constituents' commitment to the university is essential. According to Elele and Fields (2010), committed constituents are predicted to be high performers, register less absenteeism and turnover. Going by the rising rate of university enrolment, the diverse nature of the courses being offered, and the programmes adapted by the universities in Ghana (NAB, 2015), a committed constituent is needed if the universities are to accomplish their goals.

The need to ensure that there are committed constituents in the various universities in Ghana has gingered the rising debate on constituencies' participation in the governance system of these institutions. Researchers are of the view that the more constituents perceived their participation in the governance system of universities as vital, the higher their level of commitment to the institutions (Akomolafe & Ibijola, 2014; Alhassan, 2015).

The few studies that were carried out in this area focused on governance policy, institution management, and student participation (Akomolafe & Ibijola, 2014; Carey, 2013; Dela Cruz & Jimenez, 2015; Ibijola, 2014). Specifically, it has been observed that these studies did not address issues in both private and public universities with regard to the effect of constituencies' participation in the governance system on constituents' commitment. In addition, these studies mainly relied on quantitative data from the respondents. This situation has created a gap in the literature, which current researchers in the area of Sociology of Education and higher education need to look at empirically in order to narrow or close the gap. Therefore, there is the need to subject constituencies' participation in university governance into empirical-based research in order to enhance its practice and appreciate its relevance to the universities.

Examining constituencies' participation in university governance and their commitment to the universities empirically will help meet the goals of higher education, which are to provide in-depth knowledge, seek academic development, educate students as well as coordinate national development demands. This is so because, none of these goals can be accomplished efficiently if constituents within universities are poorly committed to the institutions. This study, therefore, makes an original contribution to the literature, since it is one of the few comprehensive investigations into constituencies' participation in university governance and its effect on constituents' commitment to the universities in Ghana.

1.1 Purpose of the Study

The purpose of the study was to investigate the effect of constituencies' participation in university governance on constituents' commitment.

1.2 Hypothesis

It was hypothesised that constituents' participation in university governance has no direct effect on their commitment to their universities.

1.3 Conceptual Framework

The study's framework was based on constituencies' participation in governance, which comprised of four dimensions. These dimensions were adapted from the work of Dela Cruz and Jimenez (2015). The dimensions are academic, political, financial, and economic governance. They represent the independent variables. Level of constituents' commitment to the universities was the dependent variable, which was influenced by Allen and Meyer's theory of commitment (as cited in Redman & Snape, 2014). In this theory three dimensions of commitment were specified: affective, normative and continuance commitment. Constituents' level of satisfaction was considered as a mediating variable. The conceptual framework is depicted in Figure 1.

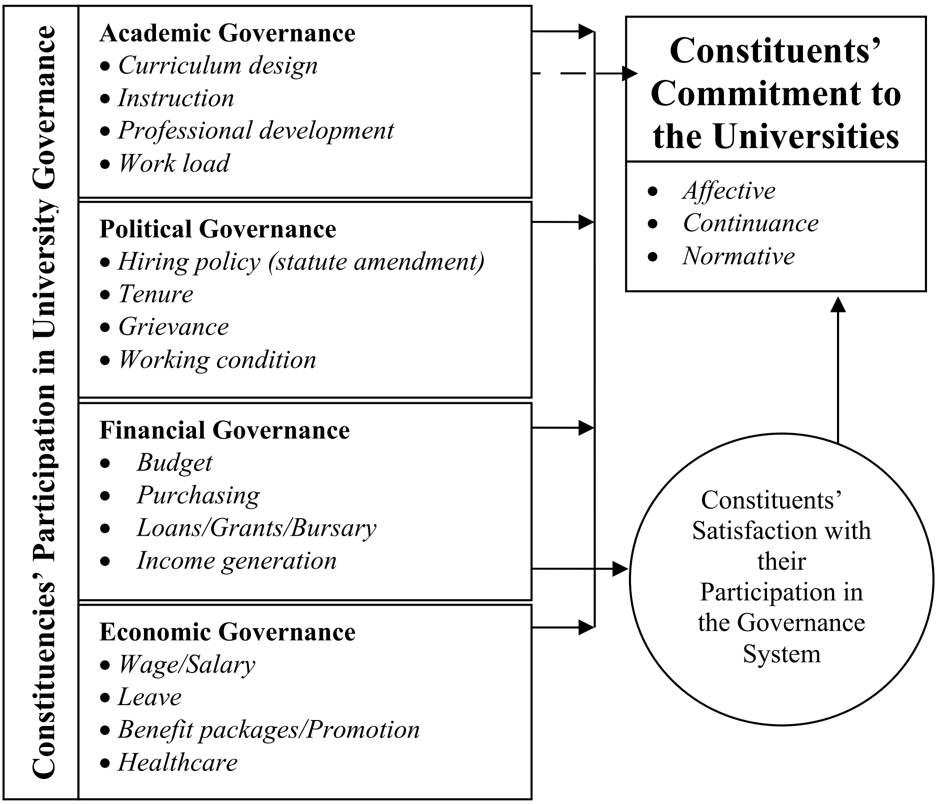

Figure 1. Model on Constituencies' Participation in University Governance and its Effect on Constituents' Commitment to the Universities

Source: Adapted from Dela Cruz and Jimenez (2015)

The argument of the study is that constituencies' participation in university governance influences constituents' commitment to the universities. However, this influence becomes stronger and more potent when constituents' satisfaction with the governance system that arises as a result of their perceived satisfaction with the various forms of participation in the governance of the universities is considered. The study therefore, hypothesised that the independent variables have effect on the dependent variable indirectly. In order words, if the universities expose constituencies to academic, financial, economic and political governance of the university as expected it would help enhance constituents' commitment to the universities. However, constituents' commitment to the universities becomes stronger and more positive when constituents are satisfied with their constituencies' participation in the governance system.

2 Methodology

The study adopted the explanatory sequential mixed method approach. Since the study entailed a survey of constituents' perception of the issues, situations and processes, the descriptive survey design was used. The accessible population was all the 196897 constituents in the six selected universities as at the end of first semester of 2016/2017 academic year (National Accreditation Board [NAB], 2016).

2.1 Sample and Sampling Procedure

A sample of 500 was used. The studied institutions were four public and two private autonomous universities in Ghana. Out of the 500 constituents sampled, 35 were selected purposively (as key informants) for interview, while 465 were selected randomly (as constituents) (See Table 1). The 465 constituents were registered members of the various constituencies, while the 35 constituents were the presidents or leaders of these constituencies within the selected universities. The presidents were selected for the in-depth interview because they represent the constituencies in most of the meetings that the constituencies participate, and have relatively adequate knowledge regarding their respective constituencies' participation in university governance as compared to other registered members of the constituencies. The sample size of 500 was based on Krejcie and Morgan's sample size estimation method.

Table 1. Population and Sample

Universities	Population	Respondents		
		Constituents	Key informants	Total
Northern zone				
University for Development Studies (UDS)	36819	88	6	94
Nkrumah University of Science and Technology (KNUST)	49815	120	7	127
Southern zone				
University of Ghana (UG)	52965	127	8	135
University of Education, Winneba (UEW)	32094	74	6	80
Valley View University (VVU)	6893	14	4	18
Central University (CU)	18311	42	4	46
Total	196897	465	35	500

Source: NAB (2016)

Table 1 shows the distributions of the number of universities selected and the population and sample distribution of the respondents and participants selected. Six universities were selected from the 12 autonomous universities in Ghana. In selecting these universities, one-stage cluster random sampling procedure was used.

Ghana as a country was first divided into two zones: Northern zone and Southern zone. The Northern zone comprised Upper East, Upper West, Northern, Brong-Ahafo and Ashanti regions while the Southern zone comprised Central, Western, Eastern, Greater-Accra and Volta regions. Two public universities were selected randomly from each of the zones using the lottery method of simple random sampling techniques. The universities selected were UEW and UG for Southern zone and KNUST and UDS for Northern zone. For example, in the southern zone, the names of the seven autonomous and accredited public universities were written and put into an opaque polythene bag and mixed thoroughly before picking one of the public universities at a time. The picking was done without looking to ensure objectivity. Similarly, with regards to the northern zone, the same procedure was done for the three autonomous and accredited public universities in that zone.

In relation to private universities with similar governance structure like that of the public universities, there were only two of them with presidential charters. These institutions were CU and VVU. Unfortunately, these two universities were all located in the southern zone, and were selected purposively. With the exception of the 35 presidents or leaders of the various constituencies who were also selected purposively, the lottery method of simple random sampling technique was used again to select all the 465 constituents of the constituencies. The various constituents within the six selected universities were the unit of analysis for the study.

2.2 Data Collection Instruments, Procedures and Analysis

A well-structured questionnaire for constituents and an interview guide for the presidents/leaders of the various constituencies were the research instruments used in collecting data. The Cronbach alpha reliability coefficient obtained from the questionnaire was 0.857. With the help of professionals and academics in the area of sociology of education and higher education, colleague constituents, and other members of the university communities, the researchers ensured that the items on the instruments covered the domain that they purport to measure. The factor analysis was also performed to ensure construct validity of the questionnaire. Variables with eigen values greater than one were extracted and items with correlation coefficient below $\pm$ 0.3 were also erased on the grounds that they were thought to have low commitment to the elements extricated. The extracted items were pool together to form each of the variables using average responses since the responses were measured using unilinear scale.

The printed questionnaires were administered by the researcher personally with the support of four principal research assistants, one from each of the selected public universities, who served as field assistants. The data collection procedures were carried out in four stages. The first stage was the collection of list of constituencies and constituents from the data management units of the selected universities. The second stage was the distribution of the questionnaire, while the third stage focused on retrieving the questionnaires administered. The fourth stage involved the conduct of interviews. The interview process started immediately after analysing the quantitative data. At the end of data collection, the researcher was able to collect completed and accurate data from 491 constituents (465 respondents and 26 participants) out of the 500 administered, representing 98.2 percent response/participation rate. After establishing the normality of the distribution, the hierarchical multiple regression analysis was used to analyse the data in order to test the hypothesis. In relation to the qualitative data, the axial coding system was used in analysing the data. This was done manually based on the themes that emerged from the field.

2.3 Delimitations and Limitations

The study was delimited to public and private universities that were autonomous in Ghana. With regard to respondents, the study was delimited to the various recognised constituencies such as junior staff, senior staff, senior members and junior members within the autonomous public and private universities in Ghana. With regard to variables, the study was delimited to the academic, political, financial and economic governance systems of the universities, constituents' level of satisfaction with the system and their commitment to the universities. However, participation in university governance is very complicated and includes more than those facets or dimensions investigated.

The limitations include generalizability, subject and situational characteristics of governance and constituents' commitment to the universities. The sample was limited to six autonomous universities in Ghana. The result may have restricted generalizability to constituents outside the six selected universities. The degree to which the results were representative of the population again could reduce the validity of the conclusions drawn from the results of the instruments as they apply to the entire population. Furthermore, it was assumed that the selected constituents had sufficient knowledge and understanding of their satisfaction with the governance system, commitment to the university and the governance system of their university to answer the items in the instruments accurately and truthfully, but this could not be verified.

3 Findings and Discussion

Numerous statements or questions were used to collect data on the independent, mediating and dependent variables. These items were measured numerically using unilinear scale. The items were combined using the pooling system to form the individual variables. Using the hierarchical linear multiple regression analysis, a diagnostic test was first conducted to check for multicollinearity among the independent and mediating variables. This was used to examine the possible undesirable situations where the correlations among the variables are strong. The preliminary analysis established that the contribution of the independent and mediating variables were not as a result of the strong association between them. The results are shown in Table 2.

Table 2. Effect of Constituencies' Participation in University Governance on Constituents' Commitment to the Universities *(N = 465)*

Variable	Model One				Model Two			
	Unstandardised Coefficients		Standardised Coefficients		Unstandardised Coefficients		Standardised Coefficients	
	B	SE	Beta (β)	Sig.	B	SE	Beta (β)	Sig.
Academic governance	0.089	0.072	0.087	0.218	0.081	0.040	0.079*	0.043
Political governance	0.115	0.066	0.117	0.084	0.065	0.023	0.066**	0.005
Financial governance	0.116	0.041	0.124*	0.011	0.037	0.013	0.040**	0.004
Economic governance	0.294	0.078	0.342**	0.000	0.141	0.037	0.164**	0.001
Satisfaction with the level of participation in the governance system					0.376	0.037	0.548**	0.000
Constant			1.151				0.905	
R			0.562				0.795	
R Square			0.314				0.654	
Adjusted R Square			0.307				0.647	

Source: Field survey, 2016. **p<0.01; *p<0.05 Dependent Variable: Commitment to the university

The multiple regression analysis involved testing of two models. As depicted in Table 2, in the first model, the variables that predicted constituents' commitment to the university significantly were economic governance [$\beta = 0.342$ (0.078), $p < 0.01$] and financial governance [$\beta = 0.124$ (0.041), $p < 0.05$]. Academic governance and political governance contributions to constituents' commitment to the university were non-significant. The findings show that constituents become more committed to their respective universities when their constituencies participate in the governance system of the university with regard to issues relating to budget, purchasing, loans/grants, income generation, wage/salary, leave, promotion and healthcare.

Participatory university governance explained 31.4 percent of the variance in the commitment level of constituents within the various public and private universities in Ghana. The quantitative results are in line with the views of the participants. For example, during the in-depth interview, a senior staff from a public university reported as follows:

> Participating in financial issues in this university will make us happier and more committed to this institution. Especially, financial related issues that affect our working life directly. If my constituency is given opportunity to participate in finance committee, appointment and promotion, and tender board meetings, I think we will be more committed to this university. Opportunities relating to promotion, leave and other benefit packages are important aspects of a worker's career and life. Therefore, they are significant factors that can influence our levels of satisfaction and commitment. Extrinsic benefit packages such as promotion, salary, leave and loan facility are factors that when we are involved in them, I think we will be more committed (President of FUSSAG).

Hypothetically, the study asserted that the independent variables did not directly predict constituents' commitment to the universities, they did so indirectly. The study, therefore, introduced constituents' satisfaction with the system as a mediating variable into the model to create a second model. Therefore, in the second model, constituents' satisfaction with their constituency's participation in the governance system was entered into the model to serve as a mediating variable. When it was entered into the first model, the beta coefficients of all the independent variables shrank. However, academic governance [$\beta = 0.079$ (0.040), $p < 0.05$] and political governance [$\beta = 0.066$ (0.023), $p < 0.01$], which were non-significant in the first model, became significant when the mediating variable was introduced. This implies that within the context of public and private universities in Ghana, constituencies' participation in the governance system of the university is not the main issue that contributes to constituents' commitment to the university, but rather there is the need for constituents to be satisfied with their constituencies' level of participation in the governance system.

Constituents' satisfaction contributed 54.8 percent to constituents' commitment. The explanatory powers of the independent variables are shared largely with the mediating variable. The total contribution (R^2) of the variables when constituents' satisfaction was introduced into the first model increased from 0.314 to 0.654, while the adjusted R^2 increased to 0.647. The results further showed that when constituents' satisfaction with their constituency's participation in the governance system entered the equation in the second model, the rate of increase of the R^2 was 108.3 percent. This means that the percentage increase was more than 100 percent, that is, more than twice the initial rate of contribution. This finding reinforces the argument of social exchange theory, which posits that all human relationships are formed by a personal cost-benefit analysis and the comparison of alternatives. Therefore, as constituents became satisfied with their constituencies' participation in the governance system of the university, they became more committed to the university in order to contribute more than what they have been contributing to the university initially. The result suggests that constituents' satisfaction with their constituencies' participation in the governance system of the university is an important factor in boosting constituents' levels of commitment to the universities.

The study therefore, fails to rejects the hypothesis that constituencies' participation in university governance has no direct effect on constituents' commitment to the universities because the influence is indirect. This means, participation in the governance system of the university by all constituencies will help develop constituents' sense of belongingness and their feeling of importance in the universities. This will enhance and also boost constituents' commitment to the universities. Constituents' perceived satisfaction could influence them to feel indebted to the university and will fulfil this through greater commitment to the university.

A participant who was a junior member from a public university during the in-depth interview said that:

> In my view, our satisfaction in the governance system of the university is boosted when we are given much opportunity to participate fully. As we participate, we begin to feel that we matter in this university, which I think will help enhance our satisfaction and commitment to the university in the long run. Therefore, participation and satisfaction are crucial in determining our commitment level to this university. In most instances, when we are satisfied with the system we begin to work with little or no supervision and we tend to be productive at the work place (President of SRC).

What all the resultant shrinkages and statistical significance mean is that the independent variables did not have a significant effect on constituents' commitment to the universities. They did so only when constituents' were satisfied with their constituency's level of participation in the university's governance system.

The findings show that constituents' satisfaction with the governance system of the university is influenced by both intrinsic and extrinsic factors. Therefore, investment in employee participation in an organisation showed better results, high employees' commitment and productivity, development of desired knowledge, skills, attitudes and other behaviours which result in higher satisfaction and performance (Carey, 2013). The findings are congruent with the submissions of Akomolafe and Ibijola (2014) who found out that participation of staff and students constituencies in the governance of the university influences significantly the commitment level of staff and students. This shows that constituents' satisfaction with the institution as a result of shared governance and fair participation helped in motivating them to be more committed and also feel that they belong to the institution, which in the long run helps in improving the performance of the institution.

Furthermore, the findings corroborate with assertions of Dela Cruz and Jimenez (2015) who posit that constituent's direct involvement in the governance system of universities with regard to receipt of information and adequate notice before implementing decisions can influence their perceived organisational support positively leading to increase in their commitment to the institution. Constituents who are cared for, participate in decision making process, and valued by their organisations will be committed to their organisation in affective way. Employees who are committed to their organisation show better performance and more meaningful contributions (Wainaina, 2015). This show that universities can therefore, involves constituencies in the governance system of the universities through supportive activities to boost constituent commitment. The findings support the call that constituents should be involved in making decisions especially those that affect their working life.

3.1 Conclusions

Though the subject of constituencies' participation in university governance has received some empirical attention, more research is needed to complete the higher education community's understanding of this complex and multifaceted area especially in developing countries such as Ghana. As this empirical study has indicated, the more constituencies are allowed to participate in the governance system of the university, the more they become satisfied in the system and also become committed to the university as a whole. That is, whenever constituencies' participate in the governance system of the university, it influences their respective constituents to be satisfied with the system which in turn makes them more committed to what the universities stand for. When that happens, it will translate into general commitment to the universities in the long run.

3.2 Recommendations

Based on the conclusion, it is recommended to management of the universities to create and sustain a congenial participatory governance environment in the institutions to motivate constituents to be committed to the universities. In order to achieve this, universities must ensure that there is fairness and equality in the number of members that represent each constituency in the various statutory university committees. Furthermore, it is recommended to management of the universities to ensure that the provision of quality information is guaranteed. This can be achieved by providing clear information with regards to the rules and regulations of all statutory committees, boards and governing bodies involved in the functioning of the university, and providing more and better information on the rights of constituencies. Management of the universities should also ensure that they give more voice and vote to certain committees and governing organs, particularly those in the lower strata of the university system, junior and senior staff, and junior members, whilst also making the functioning and decision-making of these bodies more transparent and democratic.

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Adaptation of the ADKAR Model to the Management of the Higher Education Student Loan Scheme in Uganda

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Abstract. The financing of higher education through student loan schemes is a recent phenomenon in Uganda. It constitutes a major change in the financing of higher education in the country and, naturally, it has not been without controversy. Its processes have posed challenges to both its beneficiaries and implementers. For instance, the loan policy's sustainability is yet to be guaranteed. It is with this understanding that this paper discusses how application of the ADKAR change management model can promote the performance and sustainability of the policy. Designed to help individuals and organisations, the model prescribes a five-step process towards adopting change and leveraging its power to bring about improvement by enhancing ability to confront new situations. In this paper, this process is proposed for ensuring effective disbursement of student loans, determination of interest rates and recovery of the loans from borrowers.

Keywords: Funding; Loan scheme; ADKAR.

1 Introduction

Globally, universities are operating in an ever changing environment; and national government are engaging in a series of initiatives and reforms to address the emerging changes. For instance, grants are being replaced with student loan schemes as a measure to make financing of higher education affordable (Shakeela, 2010). The rising price of attaining higher education has made affordability and accessibility of higher education institutions (HEIs) an increasingly important policy issue in recent years (Woodhall, 2010; 1991). In particular, Uganda has undertaken a lot of reforms

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in the area of financing of higher education. Until recently, higher education was mainly offered free of charge in Uganda. However, due to monetary stringency some form of cost-sharing policy was introduced in Uganda around the mid of 1990s to beef up government sponsorship scheme. This intervention has been undermined by surging numbers of candidates qualifying to join tertiary institutions in Uganda; thereby necessitating higher education student loan (Uganda Government, 2012).

Consequently, Higher Education Student Loan was launched in 2014 by Uganda Government to especially benefit less well-off students who miss full government sponsorship. The trends of beneficiaries of Higher Education Student Loan over the years has been as follows:

Table 1. Trends of Beneficiaries of Higher Education Student Loan

Academic Year	Total Applicants	Number of Loans awarded
2014/2015	2,125	1,201
2015/2016	4,399	1,276
2016/2017	3,764	1325
2017/2018	4,218	1,448
2018/2019	4,603	2,950

Source: Uganda Government (2019).

The objective of the loan scheme is to increase equitable access to higher education in Uganda and to support qualified students who may not afford higher education (Uganda Government, 2014). However, the extent to which government can achieve these laudable and well-articulated objectives depends greatly on the effectiveness of managing the available loan funds in terms on how loans are disbursed and recovery is done.

Having begun in 2014, the first cohort of beneficiaries of Higher education student loan are now out as successful completers of their successful academic programmes. However, the level of readiness to recover from loan beneficiaries is low, the policy is limited in scope of convergence and challenges of how to apply the policy on loan recovery has emerged. Moreover, the policy still grapples with several inhibitions. For instance, the loan caters only for pedagogical (research, functional and tuition fees) and costs for aids and appliances for Persons with Disabilities. The loan was meant to cater for hybrid of science and non-science programmes that are relevant to national development, and students can only apply after being admitted in HEIs. In addition, the loan is extended to only Ugandan students seeking to pursue higher education in an accredited institution of higher learning recognized by National Council for Higher Education (NCHE). The loan is not directly disbursed to the needy student(applicant) but rather to the institution of higher learning where the student is admitted to pursue an accredited programme of study in local public and private chartered universities (Uganda Government, 2014). All these shortcomings may result in high repayment defaults and make realization of the objectives of Higher Education Student Loan Policy next to impossible as it is the case elsewhere (Avery & Turner, 2012; Greene, 1989; Dynarski, 1994; Herr, & Burt, 2005). This may finally lead to abandonment of the Higher Education Student Loan. Hence, the need to espouse an appropriate model to make smooth the management of Higher Education Student Loan currently offered in Uganda. This why the study sought to explore the relationship between ADKAR model and management of Higher Education Student Loan in Uganda.

According to Hiatt (2006), ADKAR is an acronym for:
A=Awareness of the need for change
D=Desire to support and participate in the change
K=Knowledge of how to change
A= Ability to implement the change
R=Reinforcement to sustain the change

Therefore, the ADKAR Model stands for awareness of agents, their desire for change, their knowledge about change, ability to change and reinforcement to keep change happening. The ADKAR Model is capable of providing useful framework for Ministry of Education and Sports to effectively plan and execute effectively Higher education students' loan in HEIs in Uganda. Application of ADKAR Model is to help in determining the extent to which awareness, desire, knowledge, ability and reinforcement can lead to the success of higher education students` loan being implemented in Uganda.

This study might enable the different stakeholders involved in the management of student loan to identify its achievements, challenges and draw lessons to inform way forward for the implementation of the aforesaid policy. Besides, the study is expected to generate useful data to inform exact intervention for implementation of the aforesaid policy. This will therefore, directly contribute to improving the quality of student loan policy at institutions of Higher Learning in Uganda. The specific objectives of the study were to:

1. Establish the relationship between the ADKAR model and disbursement of student loans.
2. Explore the relationship between the ADKAR model and appreciation of the interest rate charged on student loans.
3. Ascertain the relationship between the ADKAR model and recovery of student loans.

2 Related Literature

The ADKAR Model was advanced by Jeff Hiatt in 1996 basing on analysis of research data from over 900 organizations over a 10-year period. However, it was not until 1999 that it was first published in a white paper titled *The Perfect Change*. According to Hiatt (2006), there are five milestones an organization or an individual must achieve for change to be successful: awareness, desire, knowledge, ability and reinforcement. Hence, for one to effectively implement change there is need for awareness of the need for change; desire to participate and support the change; knowledge of how to change; ability to implement the change on a day-to-day basis; and reinforcement to keep the change in place. Hence, the ADKAR Model reflects the necessary building blocks for individual change and was developed. This model was deemed ideal for this study because it represents the five milestones an individual or organisation must achieve for change to be successful: awareness, desire, knowledge, ability and reinforcement.

Accordingly, awareness involves making those who going to experience the change mindful of what will be occurring, why, and how it is relevant to them. Awareness helps in making clear and compelling case for why the change is needed. Therefore, creation of awareness of change leads to an understanding of the nature of the change and why this change is needed. Awareness of change can be created by specifying the nature of the change and indicating how the change align with the vision for the organization; stating why change is made and the risks of not changing; specifying how change will impact a given organization or community; and stipulating the benefits of engaging in change initiative.

Desire consists of galvanizing change to welcome, want and embrace the change. It is the urge for change targets to buy into the new direction or to be part of change; while knowledge is necessary in change initiatives because it involves giving those experiencing change the information which enables them to endorse the change. For example, organizational change cannot happen without the stakeholders understanding clearly about the change proposed and also their role in the same.

The ability to adapt to change involves developing a capacity of people to deal with desired change; while reinforcement is a process of strengthening desirable behavioural change. It is aimed at making change stick and to realize the desired benefits of a change. Reinforcement is critical to the success of all initiatives because people have a natural tendency to revert back to what they know and are comfortable with. Reinforcement of change may entail the use of celebrations, rewards and recognition, feedback, corrective actions, visible performance measurement, and accountability mechanisms.

3 Methodology

3.1 Design

Cross-sectional survey and Correlational research designs guided the study. The use of a cross-sectional design made it possible to collect data at one point in time. It also ensured that only current information was collected.

3.2 Participants

The study participants consisted of 400 students benefiting from the Higher Education Students Loan. These were selected from Bugema University, Busitema University, Kisubi University, Kyambogo University Makerere University, and Ndejje University. The six universities were selected because they have the majority of the student loan beneficiaries. Majority (78 percent) of the respondents were male. The respondents were drawn from study programmes in Agriculture, Architecture, Education, Engineering, Technology, Medicine, Environmental Science and Forestry—because students from these programs comprise majority of beneficiaries. Most of the students were in their third year followed by those who were in the first and second years.

3.3 Data Collection and Instrumentation

Questionnaires were used to collect data. In particular, a closed-ended questionnaire used enabled the researchers to raise fixed responses that enabled easy comparison of data obtained from different student loan beneficiaries from universities in Uganda. Questionnaires were deemed ideal for collecting data for this study because they made collection of data easy from a wide population of student loan beneficiaries from both private and public universities in Uganda within the shortest time. Specifically, closed-ended questionnaires led to fixed responses that enabled easy comparison of data obtained from different student loan borrowers from different universities in Uganda.

Appropriate measures were instituted to enhance the validity and reliability of the study findings. Generally, validity of the questionnaire was ensured by subjecting it to scrutiny and assessment for the relevancy of each item to the research objectives. Thereafter, necessary adjustments were effected and only relevant items were used for data collection. On the other hand, reliability of the questionnaire was established by pretested using 15 students from one of the universities hosting students benefiting from Higher Education students loan in Uganda. The pilot questionnaire enabled made it possible to establish the consistency in responses of informants. In addition, internal consistency reliability was established using Cronbach alpha. The internal consistency Cronbach coefficient of the questionnaire used was established at 0.89.

3.4 Analysis

Data were analysed using both Pearson correlation and regression analysis. The use Pearson Correlation made it possible to establish whether a relationship exists between ADKAR and the management of the student loan. Subsequently, multiple (linear) regression analysis was used to particularize the relationships established. Furthermore, application of this technique made it possible to predict the aspects of ADKAR that are significantly related to the management of the student loan.

3.5 Limitations

The information reported accrued from cross-sectional data, which makes it difficult to draw a valid picture of the management of the higher education students' loan over a long period of time. As well, it should be noted that data collection focused on the respondents' perceptions of the relationship between ADKAR and management of the higher education student loan.

4 Findings

The findings are summarized in Tables 2 through 13.

Table 2. Pearson Correlation Coefficient for ADKAR and Loan Management

ADKAR Model	Loan Management		
	Loan Disbursement	Loan Interest	Loan Recovery
Awareness of need to change	.460**	.323**.	.546**
Desire to change	.260**	.113*.	.186**
Knowledge to change	.420**	.200**.	.296**
Ability to change	.370**	.255**.	.261**
Reinforcement of change	.228**	.154**.	.172**

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

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

Table 2 indicates that relationship existed between the five elements of the ADKAR model and the three attributes of the student loan scheme investigated. The coefficients of this relationship suggest that "desire to change" accounted for 6.8% of the variance in disbursement. On "loan interest", the coefficient of determination was found to be 0.013, implying that "desire to change" accounted for 1.3% of the variable. For recovery, this percentage was established at 3.5. The coefficients of determination of "knowledge to change" and loan disbursement, interest charged and recovery were respectively found to be 17.6 per cent, 4 per cent and 8.8 percent. The coefficient of determination of "ability to change" and loan disbursement, interest and recovery was respectively found to be 13.7, 6.5 and 6.8 per cent. On "reinforcement of change", the coefficients of determination were 8.3, 2.4 and 2.9 percent for disbursement, interest and recovery respectively. Regression Analysis was conducted to establish the elements of the ADKAR Model that predicted the management of the student loan scheme.

Table 3. Relationship between ADKAR and Disbursement of Loans to Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.460a	.212	.210	4.77992
2	.508b	.258	.254	4.64510
3	.519c	.270	.264	4.61377

a. Predictors: (Constant), awareness
b. Predictors: (Constant), awareness, knowledge
c. Predictors: (Constant), awareness, knowledge, ability

The results reported in Table 3 show a model Summary of regression analysis of relationship between ADKAR and Disbursement of Loans. The R-Squared model in Table 4 reveals that the regression analyses of the relationship between ADKAR and Disbursement of Loans yielded three (3) predictors for Disbursement of Loans. These predictors are awareness, knowledge, and ability to change. Specifically, the R-Squared model indicates that awareness (aspect of ADKAR) accounted for only 21.2 per cent; knowledge of change accounted for only 26 per cent; while ability to change accounted for only 27 per cent of the variance in loan disbursement. This implies that desire for, and reinforcement of change are not significant predictors of loans disbursed to students in universities in Uganda. Hence, providers of Higher Education Student Loan should concentrate on awareness creation, boosting knowledge of loan recipients and on empowering loan recipients to acquire ability to change in view of the changing patterns in financing of higher education in Uganda.

Table 4. ANOVA in Relationship between ADKAR and Disbursement of Loans

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2440.684	1	2440.684	106.824	.000[a]
	Residual	9070.504	397	22.848		
	Total	11511.188	398			
2	Regression	2966.725	2	1483.363	68.748	.000[b]
	Residual	8544.463	396	21.577		
	Total	11511.188	398			
3	Regression	3102.867	3	1034.289	48.588	.000[c]
	Residual	8408.321	395	21.287		
	Total	11511.188	398			

a. Predictors: (Constant), awareness
b. Predictors: (Constant), awareness, knowledge
c. Predictors: (Constant), awareness, knowledge, ability
d. Dependent Variable: loan disbursement

Table 4 shows that awareness of change, knowledge of change, and ability to change are significant predictors of loan disbursement to students. This implies that there is significant positive relationship between some aspects of ADKAR and loans disbursement.

Table 5. Regression Coefficients of the Relationship between ADKAR and Disbursement of Loans offered

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	13.346	1.333		10.010	.000
	awareness	.427	.041	.460	10.336	.000
2	(Constant)	12.174	1.317		9.242	.000
	awareness	.302	.047	.326	6.375	.000
	knowledge	.266	.054	.253	4.938	.000
3	(Constant)	11.152	1.369		8.143	.000
	awareness	.267	.049	.288	5.443	.000
	knowledge	.219	.057	.208	3.859	.000
	ability	.284	.112	.131	2.529	.012

a. Dependent Variable: Loan Disbursement

Table 5 shows that the regression coefficients and t-test measuring the relationship between ADKAR and Disbursement of student Loans led to positive numbers. This implies that awareness, knowledge, and ability to change had a positive relationship with student loan disbursement. To test whether ADKAR had a positive relationship with appreciation of the interest charged on loans, all the elements of ADKAR were correlated with it.

Table 6. Model Summary of Regression Analysis of Relationship between ADKAR and appreciation of Loan Interest Charged Loans

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.323[a]	.104	.102	2.12462
2	.347[b]	.121	.116	2.10754

a. Predictors: (Constant), awareness

b. Predictors: (Constant), awareness, ability

Table 6 shows that regression analysis of relationship between ADKAR and appreciation of the interest charged on loans yielded two predictors: awareness of need to change and ability to embrace change. The R-Squared model indicates that awareness of change accounted for only 10.4 per cent; while ability to change accounted for only 12.1 per cent in the variance in appreciation of the interest charged on loans.

Table 7. ANOVA Summary of Regression Analysis of Relationship between ADKAR and appreciation of Loan Interest Charged

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	208.310	1	208.310	46.148	.000[a]
	Residual	1792.056	397	4.514		
	Total	2000.366	398			
2	Regression	241.441	2	120.720	27.179	.000[b]
	Residual	1758.925	396	4.442		
	Total	2000.366	398			

a. Predictors: (Constant), awareness
b. Predictors: (Constant), awareness, ability
c. Dependent Variable: loan interest

In Table 7, the ANOVA summary shows that awareness of and, ability to embrace change are significant predictors for appreciation of loan interest charged on students benefiting from higher education student loan in Uganda.

Table 8. Regression Coefficients of Relationship between ADKAR and appreciation of Interest Charged on Loans

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.217	.593		8.804	.000
	awareness	.125	.018	.323	6.793	.000
2	(Constant)	4.644	.624		7.440	.000
	awareness	.098	.021	.254	4.747	.000
	ability	.132	.048	.146	2.731	.007

a. Dependent Variable: loan interest

Table 8 shows that the regression Coefficients and t-test measuring the relationship between ADKAR and appreciation of interest on student loan led to positive numbers. This implies that only two (2) items of ADKAR (awareness, and ability to change) had a positive relationship with appreciation of interest. This implies that desire for, knowledge and reinforcement of change are not significant predictors of appreciation of interest. Regression analysis was conducted to test whether there was significant positive relationship between ADKAR and recovery.

Table 9. Model Summary of Regression Analysis of Relationship between ADKAR and Loan recovery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.546[a]	.298	.296	2.55582

a. Predictors: (Constant), awareness

Table 9 shows a model Summary of Regression Analysis of relationship between ADKAR and recovery on Loans offered to Higher Education Students in Uganda revealing one predictor (awareness of change) for loan recovery. The R-Squared model indicates that awareness of change accounted for about 30 per cent in the variance in loan recovery.

Table 10. ANOVA of Regression of Relationship between ADKAR and recovery on Loans offered to Higher Education Students in Uganda.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1099.689	1	1099.689	168.349	.000[a]
	Residual	2593.289	397	6.532		
	Total	3692.977	398			

a. Predictors: (Constant), awareness

b. Dependent Variable: Loan Recovery

The ANOVA results in Table 10 show that awareness of need to change is a significant predictor of loan recovery. This implies that to ensure effective recovery of the loans that they disburse, the implementers of the loan scheme should concern themselves more with awareness creation than with anything else.

Table 11. Regression Coefficients of relationship between ADKAR and recovery on Loans offered to Higher Education Students in Uganda.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.908	.713		6.884	.000
	awareness	.286	.022	.546	12.975	.000

a. Dependent Variable: loan recovery

Table 11 shows that the regression coefficients and t-test measuring the relationship between ADKAR and recovery on student Loans led to positive numbers. Table 10 further shows that only one item of ADKAR (i.e. awareness of change) had a positive relationship with student loan recovery.

4 Discussion

There is significant relationship between ADKAR and Disbursement of Loan. The results revealed that awareness, knowledge, and ability to change are the three (3) predictors of Loan Disbursement. This implies that student loan beneficiaries should be made empowered, aware and knowledgeable about Higher Education

Student Loan scheme for students in Uganda. This can be done by training loan beneficiaries on regular basis on how to put to better use the acquired loan facility.

Upon approval of student loan, HESFB must notify the loan beneficiary in writing of the student loan approved and disbursed. The notice should include the amount of the loans and when and how the student borrower should expect to receive it. The current practice of informing students through universities is not adequate in creating awareness of what is expected of the student loan borrowers. Student loan borrowers should be made aware of the implications/possibility to cancel a student loan after disbursement. First of all, students need reliably accessible, timely, accurate, and comparable information about student loan in order to make informed decisions about whether to take on student loan or not. The rise in the numbers of default could be avoided if loan servicers provided better assistance and information to financially challenged student loan borrowers. It is important to have clear payment instructions and expectations at the point of loan disbursement. Creation of awareness will enable the student loan borrowers to get to know details on the loan they intend to secure. This can help them to avoid defaulting by making sure that all payments are going to the right place as directed by the HESFB. This implies that HESFB (loan providers) should be able to supply student loan borrowers with all pertinent information related to Higher Education Students loan, including information on the balance due, required monthly payment, interest rate and payoff date. This implies that HESFB should provide student loan borrowers with key information on the loan secured. The information on the loan secured should be reliably accessible, timely, and accurate. Prior to disbursement, universities should educate and train the student loan borrowers and guarantors about the implications of obtaining a loan, how the loan works, the benefits of paying on time and complying with payment schedule. For this to happen, it is it is necessary for HESFB to have in place an efficient information system to facilitate the monitoring of past-due student borrowers.

There is significant relationship between ADKAR and appreciation of repayment rate yielded two (2) predictors for appreciation of repayment rate charged on students benefiting from Higher Education Student Loan in Uganda. Specifically, the results revealed that awareness of and, ability to embrace change are the two (2) predictors of Loan Interest Charged on students.

This implies that high repayment rates can result into a high repayment burden on student borrowers with low income. Therefore, setting preferential (affordable) repayment rates is one of the ways of securing payment commitment from student loan borrowers.

This implies that the Board overseeing Higher Education Student Loan should actively engage in on awareness creation in a bid to make loan beneficiaries appreciate of the repayment rate charged on student loan. This further implies that the overseers of Higher Education Student Loan should enable students benefiting Higher Education Student Loan to easily find information on how to access Loan; and to perform to the expectations of Higher Education Student Loan; as well as empower student loan beneficiaries to put knowledge of student Loan scheme requirements into practice to make loan beneficiaries appreciate of the interest rate charged on student loan. This can further be improved by making interest rates affordable, insulted against protect the exploitation of beneficiaries, taking into consideration inflation realities that mat occur over the period of the loan.

There is significant relationship between ADKAR and recovery on Loans offered to Higher Education Students in Uganda. The results revealed that awareness of change was only predictor for Loan recovery from students benefiting from Higher Education Student Loan in Uganda. This implies that the Board overseeing Higher Education Student Loan should concentrate on awareness creation the urgency of paying back the loan so that loan recovery activities can go on smoothly. This can be done by having open mechanism of making possible candidates aware of the existing loan opportunities, spelling out what is expected of loan beneficiaries; and making them aware of their obligation to pay back the student loan offered to them; as well as making them aware of the legal consequences if they default on paying back the loan offered to them as it has been the case elsewhere (Monteverde,2000; Podgursky, Ehlert, Monroe, Watson, &Wittstruck,2002).It also important to make beneficiaries aware of repayment periods for student loan offered to them using appropriate media and agents. Importantly, the Board overseeing Higher Education Student Loan should properly assess the borrower`s ability to pay back the loan amount received from Higher Education Student Loan after completion of studies.

There is need to design a variety of strategies to recover loans disbursed to students in HEIs. This involves, among others, developing some strong collection strategies with clearly defined, documented and consistent policies and procedures that guide staff through the loan recovery process.

To make recovery of student loan more effective, there should be regular updating of bank debt recovery system. Loan recovery requires set of coordinated, appropriate, and timely activities aimed at full collection of loans from clients. Loan recovery necessitates interaction with the client, beginning with a careful analysis of the client's situation and frequent contact over the duration of the loan. In addition, student borrowers deserve to be offered payment alternatives that are timely and appropriate to each situation, and all loan recovery activities should be documented to facilitate continuous follow-up activities.

The HESFB must help student loan borrowers to develop desire to repay the loan. Involving student loan borrowers in the establishment of mutually agreeable payment dates may increase the likelihood of repayment. The use of positive reinforcement positive reinforcement is likely to play a valuable role. It would be helpful for HESFB to reward student loan borrowers who pay on time. This could be done by offering prizes, certificates of good payment, and training to borrowers who pay on time. There is also need for credit counselling to foster education to borrower on how to manage the debts burden and repayment commitments.

5 Conclusion

Awareness, desire, knowledge, and ability to change must considered before loan disbursement, determination of repayment rates and loan recovery. Adoption of ADKAR Model in the management of Higher Education Student Loan is likely to lead to minimization of Loan defaulting and boost efficiency of Higher Education Students Financing Loan Board (HESFLB). The use of ADKAR Model will enable HESFLB to establish the borrowers' financial capacity, in terms of disposable income available for orderly debt repayment, and willingness to repay; as well as allowing for provision of additional information on how support can be sought if student loan borrowers are unable to make loan payments after program completion or graduation.

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Challenges and Opportunities in Teaching and Research in Human Physiology in Ethiopia

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Abstract. The aim of this point of view paper is to discuss the challenges and opportunities in teaching and research in the field of human physiology in Ethiopia. The challenges are seen as low availability of physiology teachers, especially those that have PhDs, low research productivity, absence of grants for basic sciences and brain drain. Opportunity for improvement is seen in the emergency of more medical schools in the country. However, close attention to standards of quality, particularly the provision of the full range of inputs required to support teaching and research, is urged.

Keywords: Medical education; Quality assurance; Reform.

1 Introduction

In Ethiopia, education is given a central position in the country's efforts to eradicate illiteracy and poverty. Higher education institutions have expanded rapidly aiming to address the need of educated society. Currently there are forty-five government owned higher learning institutions and hundreds of private institutions. In its Education Sector Development Programme, the Ethiopian Ministry of Education defines the needs of the education sector and identifies a huge need for more teaching staff to keep pace with growing number of students through modernization of the learning process using modular and interactive approaches to improve the quality of education, and availability of teaching resources such as books, ICT and laboratory facilities (Federal Ministry of Education, 2015).

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Access to quality health service is also limited due to inadequate health facilities and health professionals. Figures from the Federal Ministry of Health of Ethiopia (FMOH) reveal that the physician to population ratio is 0.03 per 1, 000, which is significantly lower than the WHO recommended standard of 1:10,000 for developing countries (Abraham & Azaje, 2013).

The government is striving to improve health service delivery by increasing quality health care, access and the number of colleges and universities to train low, middle and high level health professionals.

One of the basic science courses which are given for every future health professional is human physiology. It is basically the study of life and functioning of internal body and its interaction with its surrounding for the very existence and survival. It is a branch of biology which studies the body functions under normal conditions. It is a foundation for clinical medicine and it is considered as an essential subject in any medical curriculum. The aim of this narrative review is to discuss the current challenges and opportunities in the teaching and research activities in the field of human physiology in Ethiopia.

In Ethiopia, there is a high need for graduates in physiology. Indeed, there are currently only three graduating schools in physiology, one teaching PhD and the other two MSc program but no undergraduate degree in physiology. This results in vacancies of physiology positions that are not filled, impacting possibly of quality education. Basic physiological courses are thought mainly by MSc holders in physiology whose undergraduate degree is either biology or health related programs.

2 Challenges in Teaching Physiology

Physiology is one of the foundational courses for clinical preparation of students. It is taught in the pre-clinical years of medicine and health related programs as a basis for subsequent clinical courses. Physiology is applicable for future clinical practice. A study done in Iran revealed that pathology, physiology and anatomy were the basic sciences courses considered most helpful in preparing students for the clinical world (Jalili, Mirzazadeh, & Azarpira, 2008). Students understood that for inclusive medical aptitude and knowledge, basic sciences courses are significant. Hence quality physiology education for students is a cornerstone for a better understanding of pathological derangements. Teaching and learning physiological courses is challenging for both teachers and students especially in resources limited environments like medical schools in Ethiopia. The challenge is because of several scarcities as discussed below.

2.1 Limited number of staff

The quality of education can be determined by the number and quality of educators. In Ethiopia the number of physiology educators are very few which is disproportionally low to number of medical schools and students. For example, in the author's institution, the department of physiology has five lecturers teaching more than 200 medical students and more than 600 allied health science students all in their first academic year.

Physiology educators have to teach lectures, facilitate laboratory sessions and participate in research and community services. Low lecturer to student ratio results in overloading of the lecturers and poor supervision for students. The number of graduates in physiology each year is quite low. Currently, only three universities are teaching physiology at the post graduate level. The graduate students enrolled in these universities are first degree holders in either biology or allied health professions like pharmacy and Nurses. There is no single higher education institution in the country that teaches physiology as under graduate program. This may be one of the causes for the shortage of physiology educators in the country.

Contextual teaching linking theory to real life situations is crucial to impress upon the students the usefulness of a basic science subject in clinical years. This would also motivate the student to adopt a deeper approach to learning, resulting in the student interacting vigorously and critically with the course and focusing on the overall meaning (Entwistle, Tait, & McCune, 2000). Accordingly, a sound knowledge and skills in the clinical practice help to integrate basic physiological courses. The number of medical doctors specialized in teaching physiology is almost null. To the author's knowledge currently there are only three physiologists whose undergraduate degree is doctor of medicine and active in teaching and advising students in the department of physiology.

A study done by Nebyou S. and his colleagues to assess the medical students' choice of specialty and factors determining their choice revealed that no one has any intention to join basic science disciplines (Seyoum, Biluts, Bekele & Seme, 2014). According to this study basic science courses were not their primary choice because of several reasons. One reason not to choose physiology or basic science courses is that there is no good income while teaching and involving in research in the areas of pre-clinical courses. Family expectations, prestige and power, interest in clinical services were among the factors which make them to prefer clinical fields as their career(Yamazaki et al., 2013).

Physiology teaching involves practical sessions ranging from minor vital sign monitoring practices like blood pressure measurement to organ bath preparation to evaluate the effects of ionic concentrations on the heart. These laboratory experiments need practical knowledge and skills. In this regard, another challenge in teaching physiology is limited number of laboratory technicians in the department of physiology. Majority of staff working in the laboratory are nurses, laboratory technicians or pharmacy technicians who are diploma holders. None of them got formal training to practice physiological experiments.

2.2 Poor and Ill-organized Teaching Infrastructure

Effective teaching is delivered and knowledge transfer is achieved if the teaching and learning environment is favourable. The author had a chance to visit several medical schools over the past few years in the country. Most of the medical schools are struggling with shortage of class rooms, staff offices, laboratory rooms and up-to-date equipment and reagents. Students do not get enough references and even the text books are outdated due to unaffordable costs. In order to minimize the challenges in teaching –learning activities, the ministry of health distributed tablet computers for each student for self- learning. Author's informal discussion with students about the significance of these educational devices revealed that students have benefited as they are able to access online books, videos lectures and animations simplifying complex concepts in physiology and anatomical organizations of the body.

2.3 Curricula Challenges

Periodic revision of a given curriculum is mandatory to address the changes and expectations of the scientific world and society. Revision of medical curricula is recommended every 5 years as half of all medical knowledge becomes outdated within this period (Olopade, Adekunle, Raji, Fasola, & Oluwabunmi, 2016).

Since the launching of medical education in the country, the curriculum for medical education is designed in such a way that teaching basic science courses is teacher-centred and more theoretical and limited self- learning practice. There has been stagnation in teaching methods and learning of physiology.

In our set up we introduce the principles of physiology and proceed based on assumptions of pre-requisite and the proximity of functions and the complexity of the topic. For example, we give cardiovascular physiology followed by respiratory systems physiology. Instructors give their lectures printout to students and encouraged them to read available references in the library. Informal discussions with instructors and students claimed that students are heavily dependent on reading hand-outs and utilization of references is not well taken seriously. Physiology education is also devoted for theoretical aspects and there are limitations in hands of practical skills. It is now generally accepted that for the contemporary medical education competency-based medical education curriculum is the preferred instrument (Frank et al., 2010). In Ethiopia, majority of medical schools still use the traditional medical curriculum. Some educators have argued that the traditional curriculum has to be revised to tune the knowledge of graduates with the health needs of society and contemporary medical education. On the other hand others have reservations in the revision of the old curriculum citing depth of content as a reason for resistance.

Nevertheless, the Ethiopia Federal Ministry of Health (FMOH) along with ministry of higher education are working together to standardize the medical curriculum in all medical schools in order improve the quality of medical training.

In this new initiative the plan is to change and harmonize the traditional curriculum in to the "Competency-Based Integrated Modular Medical curriculum.

3 Challenges in Research in Physiology

The policy of higher education institution of Ethiopia on teaching and research load article No. 5.5.1/2003:99 states that academic staff members are expected to devote 25% of their time to research, and staff members of research institutes are expected to have a home base in an academic faculty or department where they are expected to devote 75% of their time on research.

Researching is a path for new knowledge and a means for solving the societal problem. Research output in Ethiopia in particular and in sub-Saharan Africa to the global scientific world is very limited. This region contributes less than 0.9 % to global published work, with South Africa contributing over 50% of that amount (UNESCO, 2009).

The Ethiopian ministry of education together with ministry of science and technology clearly understood the significance of research and they are encouraging researchers and institutions to take time for research and community services for which universities are allocating budget.

Physiology is the basis of knowledge for health and medical professionals as it provides an understanding of the functioning of the various systems of the body under normal conditions, which is important for the diagnosis of diseased body organs and best possible management options((Sefton,. 2019).

Researching in physiological field is challenging in Ethiopia. One can argue that the reason for the low output in research is poor funding and thus fewer resources for acquiring appropriate equipment for research. In addition to financial constraints to undertake research activities in physiology, several other challenges are visible in the Ethiopian context.

3.1 Teaching Load

Faculty members often loaded with teaching. The student–staff ratio is large enough impacting research work and therefore little research output to the scientific world. Most medical schools have laboratory rooms with outdated equipment and inconsistent availability of reagents and consumables for research projects due to inadequate budgets and lack of support from the institutions.

3.2 Limited number of PhD holders

There is only one university in the country accepting PhD candidates and give formal training. Because of this there is critical shortage in PhD and senior physiology educators and researchers. The problem is further complicated in that medical schools do not support basic science staff to collaborate with developed nations for experience sharing, exposure and post graduate opportunities.

3.3 Limited Grants

Internal and external funding to support projects in basic sciences is very scarce. The nature of the fields and direct application of the research output from these sciences is limited considering the status quo of the country.

3.4 Brain Drain

Brain drain also known as a human capital flight is the movement of people especially the most skilled and competent individuals or manpower from the less developed countries to developed countries. It is the movement of a knowledgeable and skilled people such as medical doctors and scientists from one country to another, commonly for better quality standard of living. Bach speculated that brain drain from Africa to developed countries is due to several factors including conflicts and political instability, job opportunities, better standard of living, favourable environment and others(Bach, 2008).

Inter departmental transfer is also very common in the department of physiology. For example, Technical assistants often stay for about two years and then flee to other departments after upgrading their degree which renders quality laboratory works. Movements between institutions within the country are also common. Physiologists often leave their institutions for greener pastures resulting in unstable staff load within the physiology department which ultimately negatively affect the quality of service delivery at home institution.

4 Opportunities and Future Perspectives

Physiology is a backbone of undergraduate medical curriculum. However, it has been recognized as a challenging discipline for students. Despite the presence of several constraints hindering the proper teaching and researching in the field, especially in the developing countries like Ethiopia, the author believes that there are windows to improve the status quo. The expansion of medical schools in the country is a good opportunity. It creates a platform for professional connections and transfer of knowledge and scientific contribution. The Ethiopian government is also developing a good attitude towards the significance of applied research in tackling the societal problems.

In addition to this, young and enthusiastic individuals are developing a positive attitude and perception towards teaching and research in physiology and this is a good opportunity for institutions to alleviate the problems of shortage of physiologists in the long run. Furthermore, institutions are striving to foster research activities by building infrastructures and encouraging faculty to devote their time for research and community services.

Increasing the quality of higher education through teaching and research should remain the principal objective of every higher education institution. This objective would be achieved if the quality of educators and researchers is improved. The institutional leaders and the government at large should pay special attention and support basic science education and research including physiology for improvement in the quality of medical practices. The provision of funding for basic science fields like physiology should be improved. Creating the good teaching learning environment is also recommended to reduce staff brain drain. Opportunities have to be created for staff development through postgraduate training in masters and doctoral programs.

In addition to this, the curriculum over physiology education has to be harmonized in such a way that a course has to be vertically and horizontally integrated with clinical and basic sciences respectively. Hence the need for special training for physiology educators and sound collaboration with clinical disciplines is mandatory.

Finally, encouraging medical graduates to pursue their careers in basic sciences would also be of helpful for better integration of the courses with clinical concepts. Furthermore, purchasing laboratory equipment along with consumables and materials needed should be also given special attention.

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Challenges of Technical and Vocational Education and Training in Nigerian History

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Abstract. Technical and Vocational Education (TVE) is a chequered aspect of education in contemporary Africa. This paper examines the complicated realities of TVE in Nigeria. In practice, indigenous education systems embedded a standard learning procedure which British colonial administration keyed into and standardised in non-formal arrangements through government departments. Therefore, the paper tracks the (dis)oriented education-industry relationship that existed after 1960. TVE in Nigerian societies has rarely improved to revolve modern technology attuned to global development and still grapple with inadequate technical applications which implies an educational gap. It unravels the governmental and non-governmental interventions. Recently, entrepreneurs and industrialists in Nigeria identified technical education as a panacea by planning to fill the learning gap through the establishment of technical universities that reflect modernisation. Accumulation and circulation of skills in TVE learning feature a process of continuity and change which explains how old and new learning systems reflect. The methodology adopted is historical and it is intertwined with the context of education systems, politics and economy.

Keywords: TVET; Curriculum innovation; Reform.

1 Introduction

This paper analyses the invention and re-invention of Technical and Vocational Education (TVE) in Nigeria. It argues that the learning system in TVE was in a phase of disorientation before its re-invention in the 21st century. The methodology adopted a historical interface between education and industry following Nigeria's economic and political trends. The primary sources used are of the National

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Archives Ibadan (NAI). From the 1930s, the colonial government in Nigeria had introduced its form of vocational education, similar to the precolonial apprenticeship system. Through colonial government departments, especially by the aid of the Department of Commerce and Industries, training programmes were organised to develop skills useful for colonial interest in industrial development. Specifically, there were collaborations between government, community associations and the private sector to organise vocational and technical education schemes. Then, the vocations of interest were agricultural education, domestic science education, textile training, secretarial and management education, medical auxiliary training, among others. The multiple partnerships and involvement in TVE training in Nigeria was initiated by the colonial government. It was meant to ease the burden of administration and also train Nigerians in technical applications, through the Public Works Department (PWD).

Technical Education and Vocational Education are used interchangeably, but there is a difference. Vocational Education is a skill-based programme, aimed at specialization in a vocation or profession. On the other hand, Technical Education is the acquisition of knowledge for practical applications. Therefore, knowledge lies in the technical education obtained to satisfy and qualify to practice a specific vocation. Mostly, vocational practice involves technical update of knowledge, but not all technical learning is vocational. Within the framework of the National Policy on Education (NPE, 1998) the objectives of TVE is to provide:

- trained manpower in applied science, technology and commerce particularly at sub-professional grades;
- technical knowledge and vocational skills necessary for agriculture, industrial, commercial and economic development; and
- people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man.

2 Invention of Technical Education in Nigeria

Production and exchange system of pre-colonial Nigerian societies was a kind of development where vocations were built through a cooperative guild system. Several craftsmen and women produced household and industrial crafts. Craft guilds concentrated in towns and their products was a nexus of agriculture and industry (Smith, 1979). Because the vocations of the precolonial societies in Nigeria were rudimentary, indigenous systems of education targeted the fulfilment of seven lifelong objectives, as defined by Fafunwa (1974). Of relevance here, is the fifth objective which states thus: “to acquire specific vocational training and to develop an honest attitude towards honest labour”. In practice, this objective manifested in the vocations practised, while apprenticeship was a virile learning system. Apprenticeship took the form of learning by living and working with a master professional. Lawal (1987) noted that Nigerians were skilled before colonialism dawned, commendable were vocations of iron work (metallurgy), wood work, cutlass, naturalistic and geometric door posts, wooden trays and spoons, pottery, basket weaving, bead making, bronze casting, leather work, threading and so on. However, the indigenous pace of industrial development in the Nigerian societies was rarely taken into consideration in designing education-industry relationship in the colonial era.

At the initial stage of colonialism (after the First World War), the approach to technical education was not necessarily standardized. It was a non-formal arrangement made to train Nigerians to apply basic techniques. The low level of education-industry relationship, then localised the knowledge economy not for industrial production but for administrative consumption to enhance development of infrastructure that favoured the evolution of colonial development plans. Thus, the levels of technical education were restructured by regional governments. That kind of technical education failed to industrialise local initiatives, which led to dearth of local crafts. Figure 1 shows the indigenous technology of drying hides and skin for leather work. As it were, indigenous technologies were clearly submerged and disregarded in the first four decades of the colonial era when Fredrick Lugard stated that:

> I foresee with great regret the decline of Kano as a commercial centre when European goods supersede her manufactures, and the export of other provinces are diverted by more direct routes to the factories of British merchants, instead of passing through the hands of her middlemen and brokers. The cotton of Zaria will then cease to come to the looms of Kano or the skins and hides to her tanneries (Lugard, 1904; Falola & Ihonvbere, 1989).

Before the 1940s, education-industry relationship was oriented along technology for administrative consumption. The educational inventions, then were practised through the PWD training schools. To a certain extent PWD technical schools were non-formal systems which shaped the paradigms of vocational practice in the society. Especially, after the Second World War, the kind of rhetoric emphasised by Lugard became unviable because the old system, style of colonial administration was prone to initiate socialist encroachment in the colonies. In essence, the 1945 Colonial Development and Welfare Plan was a ten-year plan, within which Nigerians got acquainted with new ideas as vocations, which they took for modernisation. Thus, regional governments accepted the plan to structure technical education. A rethink in the paradigms of colonial activities led to the initiation of the plan (Falola, 1996). The PWD, by virtue of its function was an agency in need of technical personnel to carry out its activities, found it imperative to develop an educational system to match development plans. Also, after the Second World War, ex-servicemen were incorporated into the PWD education schemes. The returned soldiers were trained as tailors, carpenters, bricklayers, and so on (NAI Abe Prof 1 660).

The PWD Technical School therefore developed an education system in three phases:

- men in their last year of service were selected to attend training classes in various government departments for a period of six months prior to discharge;
- short courses were held for a period of three months in selected centres of Native Administration workshops; and men to be trained in farming were taken to Farm Demonstration Schools (NAI Abe Prof 1 666).

In view of the success in the operations of PWD Technical School at Ijora, Lagos, various native administration authorities, in conjunction with Education Department nominated candidates to attend the school. TVE were thus organised for apprentices via evening classes. The syllabus stipulated an initial two-year curriculum to train in the handling of simple tools and trade principles. In the third year, elementary application was taught and the remaining three years reflected an education-industry relationship. At independence in 1960, the kind of TVE forwarded from the colonial era were put into perspective of a Nigerian system. A trade testing syllabus was oriented to professionalise vocations and test competencies that made specialists employable. Mr J. M. Johnson, the then Federal Minister of Labour, noted that the syllabus was meant to serve as a manual to underpin specific skills in each vocation, especially at a time when foreign partnerships and Nigerian government needed skilled artisans for manufacturing and social services. The syllabus was planned to orientate with its main objective and quality assurance statements stated thus:

> The objective of trade testing is intended to enable a proper classification to be maintained of persons claiming to possess technical skills when they are seeking the aid of the Employment Exchanges to obtain work. The service facilitates the placement of work of the Employment Exchanges for the benefit of both employers and workers. Workers passing any of the tests are given certificates of competency and employers are assured that any applicant for employment possessing these certificates has reached the standard of skill on the certificate (Federal Government of Nigeria, 1961).

This step was important because the PWD Training School had been producing skilled artisans, but without a consolidated curriculum to test their competencies. The testing centres were situated in four major cities of Lagos, Ibadan, Enugu and Kaduna for a favourable geo-political access. The Trade Testing services were categorized into three classes. The educational features of class III are stated below:

- It involved the use of hand tools or basic machine
- It involved oral questions
- The test is completed in a day.
- The candidate must be able to read to the limits laid down.
- Metric system was adopted to assess

Generally, in the three stages, finishing, accuracy and time taken are considered in assessment. The composition of the curriculum as expressed from the behavioural objectives of pipe fitting and plumbing works is shown below:

Table 1: Behavioural Objectives for Pipe Fitting and Plumbing Works

Class III
Every candidate must: 1. be able to use and read a rule to 1/16th of an inch; 2. be able to use and maintain the tools in common use in the trade, including callipers, square, dividers and spirit level; 3. be able to use and maintain blow lamp. Be able to solder, sweat and braze ferrous to non-ferrous metals; 4. be able to make the following joints and know the appropriate water proof luting or cement to use for: (a) ordinary coupling joints in mild steel and wrought iron piping; (b) long thread coupling joints in – M.S. and W. I. piping; (c) soldered or sweated joints in copper tubing, with brass fittings; (d) cast iron to stoneware joints as found in sanitary fittings; 5. be able to recognise pipe sizes and items of pipe fitting and their uses, such as elbows, bends, tees, reducers and back nuts; 6. be able to install under supervision simple items of plumbing and pipe fitting with connected pipe work, involving attachment to timber and brickwork; 7. be able to repair and adjust valve siphon and displacer siphon water closet; 8. be able to adjust defective screw down, gate and lever valves and taps; 9. be able to make bends in copper and W. I. piping; 10. be able to use tank and fly cutters; and 11. be able to make installation in plastic tubing.

Source: Federal Republic of Nigeria (1961).

The dynamics of education expansion that led to the establishment of polytechnics based the curriculum only on training that could not be practiced. Thus, the high rise of unemployment in contemporary times.

3 British Standards, Nigerian Reforms and TVE Planning

From the section that analysed the emergence of vocations induced by colonialism, it is no doubt that the non-formal system of technical education became distressed after the colonial era. The British curriculum was organised by the objectives of the Royal Society of Arts (RSA) and City and Guilds of London Institute (CGLI). Both bodies regulated examinations in commercial and technical subjects. From the 1940s, technical manpower was drawn among candidates qualified in the RSA/ CGLI programme. By the education reforms that occurred in Nigeria after 1960, especially the 1969 National Curriculum Conference, it became imperative that the British standards be incorporated into Nigerian education system.

As a concrete step towards effecting the reforms, its absorption in the work of West African Examinations Council (WAEC) started in 1972. The relevant technical and commercial subjects were put in WAEC syllabuses for proper control and also the government issued Federal Craft Certificate (FCC). To foster the objectives of TVE as stated in the 1981 edition of the National Policy on Education, technical education ought to be practical and efficiently skilled. The Nigerian government grappled with this because the education facilities were unnecessarily expanding without focus on grooming a skilled population. Nigeria, being a multi-ethnic and religious society, developed the educational facilities to suit primary, secondary and tertiary education, without much focus on TVE. By the 1990s, the lag in TVE was conspicuous considering the effect of Structural Adjustment Programme. The imminent challenges of sustaining an educated but unskilled population moved the Nigerian government to organise reforms which led to the establishment of the National Business and Technical Examination Board (NABTEB) in 1995. Having recognised the problem of subsuming technical education as an aspect of senior secondary education, the roles of RSA, CGLI and WAEC were entrusted to NABTEB to ensure standard curriculum dissemination of technical and commercial subjects. Henceforth NABTEB grouped its assignment into categories namely: engineering trades; construction trades; and business studies. Much as NABTEB exists as an alternative to give autonomy to TVE, its pertinence to groom a skilled population remains an illusion because its setup fails to assure TVE as a path to economic self-reliance. The relevance of NABTEB is hinged on its ability to raise the esteem of learners in TVE to avoid deskilling which has been usual since the beginning of the century. In spite of this, NABTEB continues to function by combining curriculum systems obtainable based on National Board for Technical Education (NBTE) and WAEC syllabuses.

4 Public Infrastructure and TVE Needs

On the verge of Nigeria's independence, foreign partnerships were engaged for economic modernisation attached with the zeal for self-rule. The then Federal Minister of Trade and Industry, Hon. R.A. Njoku, analysed skills acquisition as a possibility if foreign capital were allowed to invest. He said:

> Future industrial and commercial development will emphasise the spirit of partnership between foreign capital and skill, and the rapidly increasing skill and capital of Nigerians (Department of Commerce and Industry, 1955).

With reference to the establishment of a Cement Company in Eastern Nigeria, it was expected that skills were transferred to boost the knowledge base of Nigerians. In a developing economy like Nigeria, knowledge transfer is a feature of learning which leads to diffusion of knowledge. In the distribution and application of skills, this is crucial because innovations are absorbed and adapted to apply technology, and afterwards ensure optimum production levels. The above conceptualization of knowledge transfer was in tandem with how Nigeria's adopted foreign technologies through innovations which was an avenue to develop and practice vocations. From the colonial era, Nigerian governments had been in partnership with processes of skills transfer. The case study taken as an example is Escravos Bar Project in the Niger-Delta. The excerpts below are narratives of their mode of operations, which bring to fore the learning gaps. The existence of the projects meant that skilled people were involved. It shows the relationship between government plans for TVE then as found in the Trade Test Syllabuses and the competencies expected to function in completion of the project. The excerpts are summarised thus:

5 The Escravos Bar Project

The Prospects: The dredging of the entrance to the Escravos river and the construction of two moles, five-and-a-half miles and 3,000 feet long, which were completed at a cost of 13 million, have opened a third gateway into Nigeria. Already, the completion of the dredging of the channel through the bar has enabled ships going to the river ports to increase their cargo by 1,000 tons or more. Negotiations for dredging the river approaches, namely, the sections between the bar and the river ports have been opened by the Government.

The Project: This project which involved the dredging of the estuary of the Escravos river and the construction of one mole five-and-a-half miles long and a shorter one 3,000 feet long to keep the mouth of the river from silting again is a keystone to the overall development of Nigeria. Three ports (i.e. Sapele, Warri and Burutu) have now been opened to ocean shipping and will serve not only Midwestern Nigeria but all the other Regions of the Federation. These ports will also form transhipment points for the increasing traffic on the Niger and Benue rivers.

The Problems: Getting adequate supply of granite was not easy. After considering three sources, the contractors opened a quarry at Otu, which is between Okitipupa and Ondo in Western Nigeria. A railway, 17 1/2 miles long, had to be built between the quarry and Oluagbo, a creek port in the Niger Delta. From here the rocks were loaded on barges and carried 125 miles through various creeks to the Escravos bar. At the bar the granite rocks were again removed from the barge and placed in position by a 'Cormorant' crane. Escravos is an island occupied by a small fishing village 58 miles from Warri, the nearest mainland town. Labour had to be brought in from elsewhere and a town built on the island for the engineers, technicians and general labour force and their families. At the peak of operations the contractors employed 2,150 Nigerian and 80 expatriates.

The categorization of the example into the 3Ps, that is, Prospects, Project and Problems explains the perspective in which TVE was put into practice in the 1950s and 1960s. Definitely, thousands of technicians were employed in actualising the purpose of the project. As above, over 2,000 Nigerians who were technicians were put to work to resolve the engineering problems identified. The educational needs of TVE as shown in the above accounted for the structuring of a sustainable learning system.

6 Disorientation of TVE

Between 1960s and 1970s, the manpower needs of Nigeria were of a technical nature. Skills from the existing TVE were insufficient to meet up the requisites of development (Federal Government of Nigeria, 1964). Technical Institutes operating according to British standards provided manpower but failed to promote TVE for industrial development. Instead, the idea of education expansion from primary to university education was utmost. From 1960, the idea of TVE was defined under secondary education. Therein, the educational arrangements for TVE were placed as Secondary Technical Schools. At this point the purpose and relevance of TVE for industrial growth was jeopardised, through the National Policy on Education. The 1981 edition (section 50 under technical education) provided a long list of subjects. Plumbing, electrical installation, brick-laying and concreting, painting and decorating, carpentry and joinery, furniture making, bakery, shoe repairing and making printing, signwriting, metal fabrication, motor vehicle mechanics work, electronics, radio and TV servicing, tailoring, typing, book keeping, weaving, mechanical engineering, boat building and so on were programmed into the curriculum. As at then, the planners had expressed that there were difficulties in integrating education systems for the teaching and learning of the subjects. According to Samuel Tunde Bajah, incorporation of TVE into the general school system was difficult to handle. He expressed that:

> There remained the well-known problem of costs in introducing five technical subjects into the school system. Since 1984, attempts have been made to cost and find funds for the establishment of technical workshops in the schools (Bajah, 1989).

Over a period of three decades since the 1980s, the burden of funding technical education remains an illusion. It remains as such because technical laboratories built over the years in Secondary School are yet to be completed. This view stretched national resources for provision of education facilities and access, as enlisted by the Ashby recommendations of 1960 and the all-embracing National Curriculum Conference of 1969. Technical Institutes were upgraded to Polytechnics and specialised Universities. Hence, the problems of distribution of resources to manage expanded educational institution became a bane to contend with since the 1980s.

There have been challenges of funding to upgrade technical institutes in order to acquire relevant equipment to aid learning.

As at 1962, it had been discovered that Nigeria's manpower development was inadequate because there was no knowledge economy insight (Federal Ministry of Information, 1963). TVE was mainstreamed as a subset of education. However, it was not given much priority. Rather, it was taken as an alternative route. This made the informal sector more viable for a non-formal means of acquiring knowledge.

7 Reinvention of Technical and Vocational Education

The quest for reinvention of TVE was profound in the activities of NBTE. In 2010, the National Vocational Qualification Framework was used to organise a curriculum to decentralize and privatise training platforms for TVE. Private educational institutions were given the mandate to exist as Vocational Enterprise Institutions (VEI) and Innovation Enterprise Institutions (IEI) (NBTE Bulletin, 2010). The work of NBTE has been that of regulation, with the expectation that programmes of TVE are accredited.

Table 2: Training Institutions in the Review of NBTE as at 2010

Type of Educational Institution	Number of Institutions
Polytechnics	66
Colleges of Agriculture	28
Colleges of Health	10
Specialised Institutions [1]	16

[1] These are monotechnics offering vocational training in Business, Management, Maritime, Transport, Tourism and Hospitality, Journalism, Survey and Cooperative Studies.

Source: NBTE (2010).

The level of educational development for technical applications was rarely feasible within the 6-3-3-4 education system. The IEIs were created to serve as an alternative means to higher education. With much emphasis on acquisition of skills the new TVE learning system focused on the following category:

- school leavers who wish to acquire demonstrable practical skills;
- persons seeking career paths that do not need university degrees;
- persons without time for full time study but want to enhance their skills;
- persons wishing to go into self-employment
- university graduates seeking employable skills; and
- adults seeking opportunity to re-skill themselves.

The VEI graduates were awarded the National Vocational Certificate, while IEI graduates had diploma. Much as the IEIs and VEIs were new initiatives, it could be a reflection of the old system as evidenced in the Trade Test Syllabus (NAI

PR/D25). However, with private intervention of reinvention, the new system reflects the relevance of global features of technical applications to facilitate learning.

Educational partnerships projected the platforms for the development of TVE. In the whole of West Africa, Covenant University (a private university in Ogun State) signed a memorandum of understanding to teach and learn telecommunications through Huawei Telecoms Academy in the University campus. Hence, internationalisation of knowledge is a perspective to understand the reinvented learning systems. Chinese technology, with its global landmark was of relevance to the educational exchange for Nigeria because over a long time Nigerian-China relations had sustained infrastructural development.

Printing technology is least embedded in the TVE curriculum, yet, according to a 2001 report of Innovation and Business Skills Australia, it was observed that:

> The printing and graphic arts industry is passing through a phase of transformation driven by digital technologies. There has been emergence of new business models as well as opportunities created through an expansion of the traditional printing industry into a wide range of related fields like management, design, marketing and multimedia (Afolabi & Jimoh, 2014).

In order to keep abreast of development in technical and vocational practice, Nigeria's artisanal printing embraced the digital technologies through informal education systems. However, in the national education system, and even in the IEIs and VEIs, very few institutions offer printing technology. Mainly in Southwest Nigeria, Yaba College of Technology by virtue of its historical metamorphosis from Yaba Technical Institute, solely offers programme in printing technology, in spite of the fact that the missionaries had been printing since the nineteenth century. Probably, the failure to include printing technology in the TVE curriculum platforms is related to cost, lack of reading culture and fundamentally, UNESCO's International Standard Classification of Education- that classified printing and publishing as an aspect of the humanities. This assertion considered the context of print products and not the technology involved, and thus its interchangeable definition as printing and publishing in the curriculum of tertiary institutions submerged the technology. Obviously, there is a problem of consensus in placing printing education to a specific area of study, because it is multidisciplinary. But in the informal sector, it remains a vocation. Artisanal printing, though very prevalent in Nigeria, the process of training operation-technicians of printing machines is based on the apprenticeship system inherited from the precolonial era (Oladejo, 2016). Chartered Institute of Professional Printers of Nigeria adopted TVE in its objectives that it exists to promote education in the science and arts of book binding, printing, graphic design and communication and to encourage students to pursue practical training to the highest standard (Afolabi 2011).

Skills shortage in Nigeria's Oil and Gas sector is a pointer of the fact that TVE training is yet to be holistic and fully effective. Skills inadequacy has been due to the problem of curriculum content in educational institutions (Ayonmike, 2012). From the historical trajectories of Nigeria's oil and gas, or the petroleum industry, the production process is long and it involves wider technical applications. In this regard, Peek, Fenard, Gantes and Theiler (2008) analysed the robust growth of Nigeria's oil and gas industry and found that it was affected by the lack of skilled personnel. The inadequacy of skills in oil and gas economy is not devoid of government intervention. As at the early twenty-first century, Federal Government of Nigeria established the Federal University of Petroleum Resources in Effurun, Delta State. Of the technological needs were the maritime based skills. This led to the establishment of Nautical College of Nigeria in 1979 at Oron, Akwa Ibom State (Airahuobhor, 2011). The academy was subsequently changed to The Maritime Academy of Nigeria. According to Peretomode (2014), 4,300 Merchant Navy Officers had been trained while about 65,000 for maritime operations. By implication, the training of maritime based technicians for industrial growth brought into fore the relevance of TVE which further emphasised that maritime based TVE are of importance, and in response, Federal Government of Nigeria through Nigerian Maritime Administration and Safety Agency is planning to establish a Maritime University (Peretomode, 2014).

Whitt in the study of Journalism education analysed the fact that there is a difference between the teaching and practice of journalism. There is disconnect between actions in the newsroom and the principles taught in the classroom (Whitt, 1995). From Nigeria's history, the invention of TVE in journalism practice had been foresighted by Dr Nnamdi Azikwe in 1961 when he introduced the curriculum of Jackson College of Journalism at University of Nigeria, Nsukka. In the words of Odunlami, Journalism and technology are combined in contemporary times, thus it is posited that:

> Like other developing nations, Journalism/Mass Communication educators grapple with the challenge of ever increasing innovations and try to incorporate such realities into [the] curriculum. After over one hundred and fifty two years of journalism practice in Nigeria, the concern of journalism and mass educators remains how to ensure an effective blend of journalism curriculum with the constantly changing needs of the media industry (Odunlami, 2014).

8 The Perspective of Dangote Academy

In Africa, various entrepreneurs and industrialists identified the technology lag as the basis of an inefficient knowledge system. Basically, TVE remains a focal point of intervention in the industrialisation procedures. Therefore, it is trite to reiterate Falola's assertion that:

> In the US, they realize that Universities are not for everyone and that what is necessary is to create a large middle class to sustain the economy. Community colleges make it possible with vocational education, they know how to communicate the opportunities of entrepreneurship. We need to create technical

institutions and community colleges that will provide education on what we need in cities and nation, such things as how to convert refuse into energies and manure, irrigate Ogunpa river, repair machines, invent basic technologies etc. (Falola, 2012).

Hence, Dangote Academy (DA), an educational arm of Dangote Group programmed a technical education system to improve human capital for growth. Hence, understanding the DA perspective to the re-invention of TVE could be described as an effort to structure learning systems that puts into use modern technologies to develop skills suitable for a labour force that ultimately enhances industrial growth.

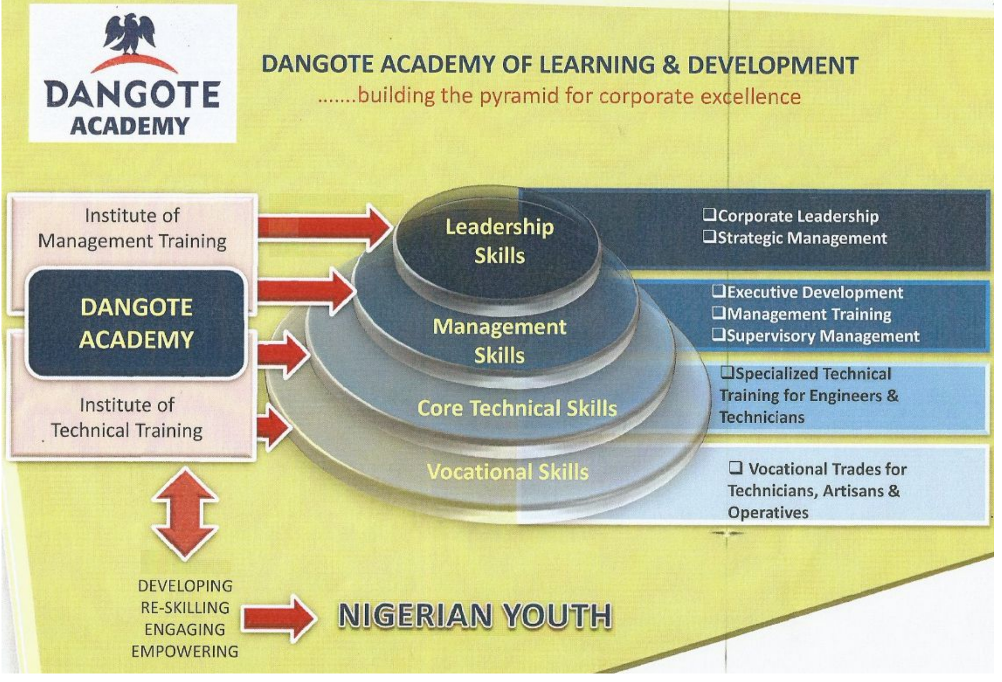

Figure 1: Structure of Dangote Academy
Source: Paramjit (2015).

Figure 2: Dangote Academy Training Schemes
Source: *Paramjit (2015).*

In other words, students from conventional technical secondary schools are absorbed into the scheme. The structure of DA as explained in Figure 2 explains the learning systems adopted and the educational outcome. In a way, DA is a response to structuring a modernised TVE system. It is obvious that DA is structuring education and training systems to improve competencies and maintain a skilled manpower for industrial development.

9 Conclusion

As of the 1950s, the Nigerian government was abreast of the realities in TVE. Then, precisely 1955, the Federal Advisory Committee on Technical Education and Industrial Training observed that there were multiple TVE schemes, and yet these were not reflected in manpower availability for economic growth. A way out was the upgrade of Yaba Technical Institute to Yaba College of Technology. In spite of all efforts in Nigeria's historical trends to get a solid TVE system, policy related issues move back and forth, but it remains imperative to groom for skills acquisition and relevance. TVE in Nigeria has a wide application considering the human and natural resources abound. Differing educational systems adopted to include or elaborate it, either made or marred its relevance in historical perspectives. Quite responsibly, Nigerian governments understood its relevance and programmed structures to work it out. But by the 1960s, attempts at overhauling the national education systems streamlined TVE as a part of the school curriculum. This step disoriented TVE to a mere arm of learning necessary for low esteemed and less brilliant students. Career paths along skills acquisition were jettisoned for courses in Law, Medicine, Engineering, Economics, Accounting and so on. Core technical applied courses were rarely taken as a career. It was discovered that all forms of skills work as identified in the Trade Test Syllabuses are learnt through the conventional apprenticeship system in the informal sector (Oladejo, 2015). This level of learning in the informal sector is the most available. The modern technologies required to improve skills remains problematic.

In the process of invention and re-invention of TVE, various initiatives were created in the forms of partnerships and collaboration with educational institutions in Nigeria. Such partnerships influenced interventions in the Telecommunication, Oil and Gas Industry, Maritime, Journalism and so on. In the dissemination of technical education required in journalism, institutions such as Nigerian Institute of Journalism, Nigerian Television Authority TV College, Radio Nigeria Training School, and Pencil, Film and Television Institute among others are quite functional. Therefore, TVE learning system could be efficient and effective by continuous collaboration of the public and private sector, and also, involvement of foreign partnerships.

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Sanitation Practices among Undergraduate Students at the University of Benin, Nigeria

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Abstract. The purpose of this study was to identify the sanitation practices among undergraduate students in halls of residents in University of Benin. The study followed a descriptive research design. The students residing in the halls of residents in Ugbowo campus at University of Benin constituted the study population. The sample size for was 400 students. These were selected through multi stage sampling. A structured questionnaire designed by the researchers titled "personal attributes influencing sanitation practices among undergraduate students" was used. The instrument was validated by three experts and when subjected to reliability testing, a reliability coefficient of 0.72 was obtained. Data collected was analysed using frequency counts and percentages. The findings were that sanitation practices among the students are poor and that age and gender influenced these practices. It was also found that inadequate water supply, poor toilet facilities, insufficient toilets, bathroom and waste disposal facilities and poor drainage system are major causes of poor sanitation in the halls of residents. It was recommended that there is need to educate the students on cleanliness during their orientation exercise and that keeping the environment clean on campus should be a joint responsibility of the school authority and students.

Keywords: Student services; Student affairs; Education facility planning.

1 Introduction

Over the years, it has been established that poor sanitary practices play major roles in the increased burden of communicable diseases within developing countries. In 2006, regions with the lowest coverage of "improved" sanitation were sub-Saharan Africa 31%, Southern Asia 33% and Eastern Asia 65% (World Health Organization

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& UNICEF, 2012; Centre for Disease Control and prevention, CDC, 2018). But most worrisome is that the communicable diseases caused by poor sanitation are preventable through proper or adequate sanitation practices. Experience has shown that there is an intricate relationship between human health and the environment. This relationship has been empirically proven. The National Institute of Environmental Health (1999) summarized these relationships and concluded that human health, illness and mortality are intimately connected to the state of the environment. Wastes are generated through daily activities of man and if they are disposed improperly, they tend to pollute the surrounding environment and endanger health. This corroborates the position of the most familiar disease model, the epidemiologic triad, which depicts a relationship among agent, environment and host, in the occurrence of disease. This triad maintains that for every disease condition, there is a corresponding relationship/ interaction among agent, host and environment.

Agent in this context refers to any factor tangible or intangible, visible or invisible whose excessive presence or relative absence is necessary for a particular disease or injury to occur. General classes of disease agents include chemicals such as benzene, oxygen, and asbestos; microorganisms such as bacteria, viruses, fungi, and protozoa; and physical energy sources such as electricity and radiation.

Environment in this context refers to all extrinsic factors, other than the agent, that can influence human health. Environment is further categorized into social factors such as crowding, sanitation, adherence to laws, rules and regulations of the land and the availability of health services, physical factors such as pollution, geology and climate, and biological factors such as insects that transmit the agent.

The host factor is the sufferer of the disease condition. Host's susceptibility is affected by personal characteristics such as age, occupation, income, education, personality, behaviour, attitudes values, skills, gender and other genetic traits (2018). From the perspective of the epidemiologic triad, the host, agent, and environment can coexist fairly harmoniously. Disease and injury occur only when there is interaction or altered equilibrium among these three variables. But if an agent, in combination with environmental factors, can act on a susceptible host to create disease, then disruption of any link among these three factors can also prevent disease.

The existence of this relationship among agents, hosts and environment is one of the key causes of poor sanitation practices in developing countries like Nigeria including her higher institutions where the hostel (environment) is littered with all forms of environmental pollution (agents) by man himself (host) thereby causing disease condition. Based on this, the Nigerian government set up institutional bodies of various levels for environmental sanitation. Tertiary institutions have also set up some frameworks in their institution in this regard. However, one still finds the cities and hostels very filthy. In the higher institutions, faculties and hostels are dirty most of the time. It becomes necessary to find out to what extent individuals (hosts) particularly students in the universities are involved in environmental sanitation.

1.1 Statement of Research Problem

Following the problem of poor sanitation practices in higher institutions of learning in Nigeria, the authorities in many of these institutions contracted the cleaning of hostels out by employing cleaners. Based on this one will be quick to think that universities hostels are now "heaven on earth". But this might not be true as a visit to the university of Benin halls of residents and many other universities reveal that the hostels environment are still rough and dirty. Although many researchers have argued that the unhealthy state of school hostels could be traced to poor or total lack of supervision of these cleaners, others maintained that it is one thing to employ cleaners and it is another thing for the cleaners to work under an enabling environment or favourable atmosphere by ensuring adequate provision of working tools and facilities. Having gone through many literatures, the researchers are not satisfied that previous studies' efforts geared towards understanding and eradicating poor sanitation practices among students were mainly based on environmental and agents factors with little or no attention giving to the host factors. Therefore the need for this study to consider the hosts' factors in relation to hostel sanitation practices with particular interest in hosts' personal characteristics such as: students sanitation practices, students attitudes towards sanitations in hostels, sex influence on sanitation practices, and adequacy and availability of facilities. This is because employing cleaners and having adequate facilities are good but it is better when students have the right attitudes towards sanitation and good sanitation practices. It was on this note that this study was undertaken.

1.2 Research Questions

1. Do University of Benin undergraduate students engage in sanitary practices in their halls of residence?
2. Does sex influence the students' sanitation practices?
3. What are the causes of poor sanitation practices among students?
4. What attitudes do students hold towards sanitation practices?

1.3 Purpose of the Study

The purpose of this study was to investigate sanitation practices, the attitudes of students towards sanitation and the extent to which undergraduate students engage in sanitary practices.

2 Methodology

The study followed a descriptive survey design. The population was made up of all the 7,360 undergraduate students living in the five the halls of residence in Ugbowo campus of University of Benin. The sample size for the study was 400 respondents and was selected through the multi-stage sampling technique. In the first stage the stratified random sampling technique was used to stratify the population by sex (i.e. male, female and mixed hostels). This resulted in Hall 1, 2, 6 and Keystones for girls' hostels, 3 and 4 for boys' hostels, while 5, NDDC and Clinical Hostels for mixed hostels. In the second stage, purposive sampling technique was used to pick two halls of residence each from boys and girls hostels to get a total of four halls of residence and the halls are 1, 2, 3 and 4 respectively. In the third stage, the simple random sampling technique was used to select 100 students from each of the selected halls to get a total of 400 respondents.

A self-constructed questionnaire titled "personal attributes influencing sanitation practices in halls of residence" was used. The questionnaire had four sections: Section A elicited demographic data (i.e. sex, age and educational level). Section B was made up of fifteen (15) items on the sanitation practices of students living in the halls of residence. Section C was made up of four (4) items on the causes of poor sanitation practices while Section D was made up of nine (9) items on the attitudes the students held towards sanitation in their halls of residence

A draft of the instrument was validated by three experts in the Department of Health Safety and Environmental Education, University of Benin, Benin City after which it was revised. The reliability of the instrument was determined using test-retest method of reliability. The instrument was administered to twenty (20) students in the halls of residence that was not used for this study. After an interval of two weeks, the same instrument was re-administered to the same group. The scores obtained from the tests were computed using the Pearson Product Moment Correlation Co-efficient, a co-efficient score of 0.87 was obtained. The researchers administered the questionnaires to the respondents in their various halls of residents with the help of two trained research assistants. Respondents were requested to respond to all the items in the questionnaires and a total number of 400 questionnaires were administered. The data collected was analysed using frequency counts and percentages.

3 Findings and Discussion

The findings are shown in Tables 1 through 4.

Table 1: Students' Sanitation Practices

SN	Attributes	Yes (%)	No (%)
1	Do your roommates make use of the facilities provided by the school for waste disposal?	304(76)	96(24)
2	Do your roommates wash their hands regularly with soap and water?	128(32)	272(68)
3	My roommates are not fond of littering the environment with dirt.	260(65)	140(35)
4	Do your roommates make use of the bathroom facilities provided by the school?	190(47.5)	210(52.5)
5	My roommates do not throw dirty water just anywhere in the hostel environment?	206(51.5)	194(48.5)
6	Students in the hostel do not urinate indiscriminately.	36(09)	364(91)
7	My roommates do not store up dirty plates for days before taking out time to wash them?	142(35.5)	258(64.5)
8	Do your roommates brush their teeth at least twice a day?	196(49)	204(51)
9	Do your roommates make use of the toilet facilities provided by the school?	226(56.5)	174(43.5)
10	My roommates usually sweep their bed space everyday	208(52)	192(48)
11	My roommates do not soak dirty clothes in water for the discomfort of others.	276(69)	124(31)
12	My roommates' kitchen utensils are always neat.	210(52.5)	190(47.5)
13	My roommates always remove the cobwebs in the room.	78(19.5)	322(80.5)
14	My roommates always clean/mop their bed space.	150(37.5)	250(62.5)
15	My roommates do not throw solid refuse into the gutters.	260(65)	140(35)

Table1 above reveals the extent undergraduate students engage in sanitation practices in their various halls of residence in University of Benin. The Table 1 shows that 76% of respondents make use of the facilities provided by the school for waste disposal, 68% do not wash their hands regularly with soap and water, 35% of respondents are fond of littering the environment with dirt's, while 65% of them do not, 52.5% do not use of the bathroom facilities, 48.5% of respondents dispose dirty water anywhere in the hostel environment, while 51.5% of them do not, 91% urinate indiscriminately, 51% do not brush their teeth regularly (at least twice daily), 56.5% make use of the toilet facilities provided by the school, 52% of respondents sweep their bed space daily, 31% of respondents soak dirty clothes in water for days thereby making others uncomfortable, while 69% of them do not, 52.5 % of respondents' kitchen utensils are always neat while 47.5% of them are not, 80.5% do not remove cobwebs from their rooms, 62.5% do not clean/mop their bed spaces. 35% of respondents throw solid refuse into gutters, while 65% of them do not. From Table1 above, it can be concluded that the sanitation practices among University of Benin undergraduate students are low as revealed by mean scores of 47.8% against 52.2%.

Table 2: Influence of Gender on Sanitation Practices

S/N	Items	Male		Female	
		Yes (%)	No (%)	Yes (%)	No (%)
1	Do your roommates make use of the facilities provided by the school authority for waste disposal?	160(80%)	40(10%)	144(72%)	66(28%)
2	Do your roommates wash their hands regularly with soap and water?	48(24%)	76(76%)	40(40%)	60(60%)
3	My roommates are not fond of littering the environment with dirt.	64(64%)	36(36%)	66(66%)	34(34%)
4	Do your roommates make use of the bathroom facilities in hostels?	77(77%)	23(23%)	18(18%)	82(82%)
5	My roommates do not dispose dirty water indiscriminately?	49(49%)	51(51%)	54(54%)	46(46%)
6	Students in the hostel do not urinate indiscriminately	06(06%)	94(94%)	12(12%)	88(88%)
7	Do your roommates store up dirty plates for days before washing them?	26(26%)	74(74%)	45(45%)	55(55%)
8	Do your roommates brush their teeth at least twice daily?	61(61%)	39(39%)	39(39%)	61(61%)
9	Do your roommates make use of the toilet facilities provided by the school?	93(93%)	07(07%)	20(20%)	80(80%)
10	My roommates usually sweep their bed space daily.	43(43%)	57(57%)	61(61%)	39(39%)
11	My roommates do not soak dirty clothes for days to discomfort others.	62(62%)	38(38%)	76(76%)	24(24%)
12	My roommates' kitchen utensils are always neat.	41(41%)	59(59%)	64(64%)	36(36%)
13	My roommates always remove the cobwebs in their rooms.	15(15%)	85(85%)	24(24%)	76(76%)
14	My roommates always clean /mop their bed spaces.	32(32%)	68(68%)	43(43%)	57(57%)
15	My roommates do not throw solid refuse into the gutters.	63(63%)	37(37%)	67(67%)	33(33%)

In Table 2 above, more males (80%) than females (72%) make use of waste disposal facilities, more males (76%) than females(60%) do not wash their hands regularly with soap and water, more females(66%) than males(64%) do not litter the environment with dirt, 77% of males make use of bathroom facilities while 82% of females do not, 54% of females do not dispose dirty water indiscriminately while 51% of males do, 94% of males and 88% of females urinate indiscriminately in hostels' environment respectively, more females(45%) than males(26%) store up dirty plates for days before washing them, more males(61%) than females(39%) brush their teeth at least twice daily, more males(93%) make use of toilet facilities than 80% of females who do not, 61% females sweep more than 57% males who do not, more females(76%) than males(62%) do not soak clothes for days to discomfort others, more males(41%) than females(36%) do not kitchen utensils neat, more males(85%) than females(76%) do not remove cobwebs from their rooms, more males(68%) than females(57%) do not clean /mop their bed spaces and lastly more males(37%) than females(33%) throw solid refuse into the gutters. In conclusion, sex does influence sanitation practices. Males with a mean score of 774(51.6%) engage in sanitation practices more than their females' counterparts with a mean score of 683(45.5%).

Table3: Causes of Poor Hostels Sanitation among students

S/N	Items	Yes	No
1	Does shortage of water in the hostel contribute to the poor environmental condition of the hostel?	320(80%)	80(20) %
2	The major cause of indiscriminate urination by students in the hostel is due to poor toilet facilities.	346(86.5%)	54(13.5%)
3	The poor sanitary condition of the hostel is as a result of insufficient toilet and waste disposal facilities.	306(76.5%)	94(23.5%)
4	Poor drainage system is one of the factors that contribute to the poor environmental condition of the hostel.	332(83%)	68(17%)

Table 3 shows that 80% of respondents agreed that storage of water in the hostel contributes to the poor environmental condition of the hostel, 86.5% of respondents said that the major cause of indiscriminate urination by students in the hostel is due to poor toilet facilities, 76.5% of respondents reported that insufficient toilet and waste disposal facilities resulted in the poor sanitary condition of the hostel and lastly, 83% of respondents agreed that poor drainage system is a factor that contributes to poor sanitation practices.

Table 4: Attitudes towards Sanitation

S/N	ITEMS	A	D
1	Students should be held responsible for the poor sanitary condition of the hostel environment.	143(71.5)	57(28.5)
2	The cleaners should be strictly held responsible for the poor condition of the hostel environment.	82(41)	118(59)
3	Students found not practicing sanitation or not keeping their environment clean should be sent out of the hostel	103(51.5)	97(48.5)
4	Keeping the hostel environment clean is a joint responsibility of the school authority and the students.	195(97.5)	5(2.5)
5	It is humiliating for me to clean any part of the hostel apart from my room.	80(40)	120(60)
6	Students should be bothered about environmental sanitation.	168(84)	32(16)
7	It is necessary to keep your environment clean.	199(99.5)	1(0.5)
8	I am disgusted with the poor sanitary condition of the hostel environment.	197(98.5)	3(1.5)
9	Seeing students messing up toilet facilities is irritating.	196(98)	4(2)

Table 4 above shows the attitudes of University of Benin undergraduate students towards sanitation. The Table4 shows that 71.5% of the respondents agreed that students should be held responsible for the poor sanitary condition of the hostel, 41% agreed that cleaners should be held responsible for the poor condition of the hostel while 59%, disagreed, about 52% agreed that students found not practicing sanitation should be sent out of the hostel while 97.5% maintained that keeping the hostel environment clean is a joint responsibility of the school authority and the students, 40% of respondents find it humiliating to clean the environment apart from their rooms while 60% disagreed, 16% agreed that students should not be bothered about environmental sanitation while 84% disagreed, 99.5% said it is necessary to keep their environment clean, 89.5% feel disgusted with the poor sanitary condition of the hostel environment and 98% of respondents feel irritated when they see others messing up toilet facilities. Lastly, the Table4 shows that students' attitude towards sanitation is very high in the University of Benin because 75.7% of them have a positive attitude towards sanitation.

4 Discussion, Conclusion and Recommendations

The study revealed that the extent to which students engage in sanitation practices is low. This finding corroborates the findings from the study of Musa and Haque (2016) that the male hostels of the University were not free from environmental problems. The result of this study could be related to poor knowledge and people's negative attitudes towards sanitation practices.

This agrees with findings of Worlanyo (2013) that most of the market users in his studies have inadequate education on good hygiene and basic sanitation promoting practices. As a result they do not see the issue of improved sanitation as a current priority; hence, they failed to change their lifestyle which could lead them to practice proper sanitation. But disagree with the findings of Fonyuy (2014) that the understanding of the notions of hygiene and sanitation, the knowledge and practices on the collection and preservation of potable water of the women used in his study, were not based on the level of education but on how much public health information they got about drinking water collection, treatment and preservation.

The study showed that gender and age influences sanitation practices of students. It was discovered that male students engage more in sanitation practices than female students and also, those between the ages of 19-23yrs engage more in sanitary practices than others because at that very stage in life, individuals do their best to fit into the society and to be accepted by their peers.

The findings of this study disagree with that of Dube and January (2012) when there was no association between a child's sex, age and parents' occupation with predisposing, enabling and reinforcing factors that are causally related to water- and sanitation- related hygiene practices among school going children.

The study also revealed that the major causes of poor sanitation practices among students are: poor toilet and bathroom facilities, insufficient toilet and waste disposal facilities, shortage of water supply and lastly, poor drainage system. This agrees with the findings from the study of Musa and Haque (2016) that irregular water supply, lack of waste disposal facilities and student's attitude contributes to poor hygienic conditions in the hostels while there is a lack of maintenance of wastes facilities.

Lastly this study reveals that the attitude of student towards sanitation is high. This study disagrees with that of Ikelegbe and Ogeah (2010) who carried out a study on the attitudes of students towards environmental sanitation in the University of Benin. Similarly, it disagrees with the findings from the study of Musa and Haque (2016) that student's attitude contributes to poor hygienic conditions in the hostels.

Based on the result of the study, it can be concluded among others that that sanitation practices among undergraduate students of University of Benin in their halls of residents is low and that inadequate water supply, poor toilet facilities, insufficient toilet, bathroom and waste disposal facilities and poor drainage system are the major causes of poor sanitation in the hostel environment.

Based on the findings and conclusion the following recommendations were made:

1. Keeping the school environment clean should be a joint responsibility of the school authority and students.
2. There is need to educate the students on cleanliness during their orientation period.
3. The school authority should organize environmental sanitation competition in order to stimulate the students to keep their hostels environment clean.

4. The school authority should contract more cleaners and they should be regularly supervised.
5. Rules and regulations should be placed in the hostels concerning the environmental sanitation of the hostel and defaulters should be punished.
6. Hostel executives or representatives should be placed in each block to monitor students and report defaulters.
7. The school management should rise up to the responsibilities of making facilities adequate especially the provision of adequate water, more toilets and bathing facilities.

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