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**Teachers' Experiences of Teaching Practical Geography
in Secondary Schools of Uganda**

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Teachers' Experiences of Teaching Practical Geography in Secondary Schools of Uganda

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Abstract

Geography is a practical subject and its approach in teaching is practical in nature; focusing on concepts that are relevant to everyday life. The main purpose of this study was to guide teacher trainees identify practical activities in geography classes in secondary schools of Uganda. The teaching methods used, the challenges and problems faced by geography teachers. Results revealed that activities like map work, photograph interpretation and fieldwork are the main activities. Teachers use the following methods, lecture, question and answer, talk and chalk and to a less extent group work. The main challenges include lack of instructional materials, lack of sufficient time on timetables, lack of geographic knowledge and skills by some teachers. The researcher recommends retooling people who set summative examinations so that they align it to new trends in education, continuous professional development courses, seminars and conferences for geography teachers to acquire new trends in geography education. School administrators and government to inspire parents to buy, instructional materials including textbooks for their children.

Keywords: Teaching practical geography, challenges, and problems.

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Introduction

Uganda is located in the heart of Africa and is commonly referred to as the Pearl of Africa. The education system is inherited from the British type with six years of secondary education. Geography is a practical subject in nature and practical work is central to geography and its development of skills that students will use in future life as professionals. Geography as a discipline of study explains the character of places and distribution of features and events as they occur and change on the surface of the earth. It is concerned with people as they interact in the environment in the context of specific places and locations. As a discipline of study there are a range of approaches to its teaching and learning since it has to synthesize work and scaffold concepts from science; biology, chemistry, physics, as well as humanities; history, economics, politics, culture which includes religion, music, dance, fine art and many human activities. A geography student has to investigate the location, situation, interactions, spatial distribution and differentiations of features and human activities.

A unique aspect of geography is that it exposes students to a wide range of techniques for helping them understand human and environmental patterns and processes, for example research skills, communication skills, interpersonal relationship skills, critical thinking skills, creative thinking skills, production skills, fieldwork techniques, analysis, problem-solving skills, observation skills, ethical values to mention a few. Geography, therefore, is a practical subject and the teaching methods should conform to that approach. Billec (2015) suggests to educators that students should engage in work activities so that an individual can secure the conceptual procedural and dispositional occupational knowledge required for their work, including capacities that are adaptable to other circumstances where that occupation is practiced. In case of geography education strategies such as explaining, describing, analyzing, data collection and visual representation of different kinds of data can be used to promote learners' conception development such as factual knowledge, propositions, associations and causal factors. Strategies such as observation, listening for example, help in assisting the development of values and attitudes which are part and parcel of the new trends in education. Geography teachers are expected to use a range of teaching and learning activities to encourage students question/reflect on what they are exposed to and become independent thinkers. A modern graduate in geography is expected to have some experience and technical skills in cartography land use and other field mapping, data analysis and presentation, quantitative methods and statistical analysis, land surveying, field techniques and research methods in geomorphology and biogeography, interpreting, metrological information, soil sampling and soil analysis, the use of computers in data processing and mapping, use of GIS and GPS technology, social survey, research design, document analysis, questionnaire design, focus groups, attitude measurement and other qualitative interviewing techniques, analysis of secondary data and appropriate reporting of authentic researched information.

These wide ranges of activities provide students with opportunities for developing personal skills for career development. Practical classes in geography

are designed to learn those skills step-by-step. The techniques and methods for collecting and manipulating geographical data will help the students understand materials presented in lectures, books and journals.

There is concern of high unemployment, alcoholism and drug abuse globally. This requires youths to acquire competences relevant to the employment contexts. Youths in schools of the twenty first century are not learning the 20 first century skills as recommended by UNESCO (2012) to enable them survive in their environment. Implying that, there is need to improve education to meet the demands of labor markets. The curriculum therefore has to be relevant by including skills, values and attitudes including creativity, creativeness, problem solving and decision making. UNESCO (2012) adds on that life skills must be given to our youths that is psychosocial and interpersonal skills that help them make informed decisions, communicate effectively, and develop coping and self-management skills. If this is well argued, will help them lead a healthy and productive life. Many job openings according to Murphy (2016) in the geotechnology arena are not simply for individuals with technical skills, they are substantive areas; environmental analysis, transport planning, marketing planning and weather forecasting, where geotechnologies are being heavily employed.

Theoretical Framework

The constructivist theory of Jean Piaget and Jerome Bruner (1964) is used in this study. They emphasized the importance of the active involvement of learners in constructing knowledge for themselves and building new ideas or concepts based upon current knowledge and passed experience. Students do not learn deeply by listening to a teacher or reading a textbook. To teach effectively one must design a good learning environment, one needs a good understanding of the learner's cognitive development. Constructivism draws heavily on psychological studies of cognitive development. The researcher in addition used a transformative learning theory which seeks to explain how humans revise and interpret meaning. Transformative learning is a cognitive process of effecting change in a frame of reference. The frame of reference defines our view of the world. Emotions are often involved. Adults have a tendency to reject any new ideas that do not correspond to their particular value, association and concepts. Transformative learning takes place by discussing with others the reasons presented in support of competing, interpretations, by critically examining evidence, argument and alternative points of view. Transformative learners move toward a frame of reference that is more inclusive, discriminating, self-reflective and integrative of experience (Learning Theory Education 2015).

Practical work in geography is central both to the appeal of science education and the development of skills that will be of use in future life

Context

Geography in secondary schools of Uganda is offered as a compulsory subject in the first four years (Ordinary- level). This syllabus includes the Geography of East Africa, Studies of Developed countries; North America, The

Rhine Lands; Countries along the River Rhine and China. A practical aspect is integrated in East African paper, and this includes map reading, photograph interpretation and fieldwork. In the last two years of secondary education (HSC) A' level geography is an optional subject, offered both students of science and humanities. Papers offered include, Geography of Uganda with a practical component; map reading, photograph interpretation and field work, Africa and Studies of Development based on themes across the world.

Justification for integration of practical geography according to Murphy (2015) includes;

“Seen in utilitarian terms geography has long had an employment advantage over some social science and humanities because there are clear practical application for some of the basic skills that are part of geographic training; map making, location analysis, weather forecasting, land survey, terrain analysis, environmental assessment, etc. Moreover, contemporary geographical training also typically involves a set of critical thinking, writing, and presentation skills which, when combined with substantive knowledge of particular places or geographic phenomena, can be very appealing to employers. It is no surprise that geography majors find their way to position to ranging from foreign policy analyst to travel agent, from forest conservation monitor to weather broadcaster, from map maker, to planner, and from elementary school teacher to surveyor (Murphy 2015 pp34)

To sum up the following skills are recommended by these scholars; communication skills, independent learning, teamwork and flexibility, thinking skills, digital skills, play, multitasking, collective intelligence, negotiation, simulation, judgment, appropriation, distributed cognition. They argue that although textual literacy is essential in learning, students need a range of skills in order to successfully negotiate the interconnected world of the 21st century. In addition, understanding student motivation, meta- cognitive skills, learning strategies and attitudes is of paramount importance for research and practice of learning and teaching.

Expected instructional resources in a geography laboratory include the following materials; map extracts, wall maps, tracing paper, graph paper, measuring tapes, reading temperatures in weather stations, computers, binoculars, survey equipment, soft-ware package, printers, work tables, power point projectors, cameras, photographs and satellite images, globes, photocopiers, video projectors, atlases, rock specimen, weather measuring equipment (Queensland curriculum and Assessment Authority (2014), Rebuild India International (2017)). With that kind of equipment, students are expected to experience practical activities like field mapping, data analysis and presentations, soil sampling and soil analysis, draw cross-sections, graphs and sketching maps, read topographic maps, interpret photographs and many other activities inside and outside the classrooms (Rahul Chaurasia 2017). Currently, Geography teaching and learning in secondary schools is a passive memorization of concepts and maps. Students in well to do schools have access to computers, carry out fieldwork and many practical activities. The summative external examinations which are set by the Uganda Examinations Board at the end of O-level and A'

level encourage cram work rather than studying to understand. Deprived public and private schools are likely not to possess the essential gadgets and reading materials to study geography in a practical manner, consequently teaching and learning is theoretical. Many students are missing a lot of geographical knowledge and skills due to wrong approach in the process of teaching and learning the subject. The subject can be made livelier, move away from the traditional textbook and fire up geographers of today and tomorrow.

Problem Statement

Traditional methods of teaching are still used in most secondary schools of Uganda like memorizing maps, lecture methods, talk and chalk, question and answer and to a small extent fieldwork and group discussions. Despite the initiative of revising the geography syllabus for O' and A' level in 2008, new trends in education of integrating skills for work as advised by UNESCO have not been addressed. Secondly, no effort has been made to continuously retool teachers of geography in-service by MoES or education institutions of higher learning. Practical geography contributes 40% to external examinations pass mark and this probably is the cause of poor performance in Geography at both O-Level and HSC. The researcher explored approaches geography teachers use to teach geography, issues and challenges faced in the process of teaching and learning. Suggestions to improve practical geography teaching are stated.

Purpose of Study

The main purpose of this study was to improve the teaching of practical geography which is an important aspect of geography education in secondary schools of Uganda.

Objectives of the Study

- To identify the teaching methods employed by geography teachers in secondary schools
- To explain teachers challenges, issues, problems and lack of adequate practical approaches for teaching geography
- To suggest strategies to address the gaps identified in this study.

Methodology

The researcher used third year geography teacher trainees to carry out this research in secondary schools in three districts of Kampala, Wakiso and Mukono which are located in south Central Uganda. Makerere University is located in

Kampala district, the other two districts surround Kampala district, making it easy for students to visit schools in the study areas without spending much. Students were grouped into five members each. The researcher assumed that since the teacher trainees had just graduated from secondary schools to University they could easily identify gaps in the teaching of practical geography. The students were in position to easily point out weaknesses of some geography teachers whom some of them experienced before joining University.

The teacher trainees formulated their own objectives for the study in each group. They selected a school where they did the study, collected data after which they wrote the report they handed in. The researcher supplemented their work from which this paper was generated. 20 teachers from participating schools participated in this study

Methods used by Teacher Trainees to Collect Data

1. interviewing teachers, head teachers and geography heads of department,
2. Observation ; in classrooms
3. Recording
4. Questionnaires
5. Data from documents

Presentation of Results

Objective one Concerns Teaching Methods used by Geography Teachers in Schools in sampled Districts

Methods used in the well established private and government schools like Makerere College School, Nabisunsa Girls School, Kings College Budo, Green Hill Academy and Seeta High School are slightly different since such schools have up-to-date instructional materials mentioned above. The parents are rich can sponsor field work; the students are the cream of the country and are well motivated to study. These are compared 'third world school' which belong to government and the private schools without support from government. These may not have a geography laboratory, may not have essential instructional materials, students are not well motivated, teachers may not have the required qualifications.

The most commonly used teaching methods according to the teacher trainees are:

- Lecture method
- Group discussion
- Project method
- Guided discovery
- Fieldwork
- Question and answer
- Demonstration

Seminars

Drawing sketches, cross-sections, parnormas, and line transects, reading maps, photograph interpretation,

Watching video, other activities include measuring distances and calculating as well as quizzes. Observation method

All schools start teaching simple practical activities of geography in senior one

Objective Two, Challenges, Issues, Problems faced by Geography Teachers in Secondary Schools of Uganda. The following were identified by Teacher Trainees

1. Inadequate qualified geography teachers; some poor private schools do not have funds to pay a qualified teacher. The third world government schools similarly do not have money to pay qualified teachers. A school may have one qualified teacher and the rest are part-timers. Students consult with their teachers as and when they appear at school
2. Limited instructional materials, eg, maps, photographs, calculators, pencils, graph and tracing papers, work tables/desks especially in deprived schools.
3. In third world government schools and poor private schools parents cannot afford to pay extra funds for instructional materials as well as fieldwork.
4. Some teachers feel practical activities are time consuming and yet they feel some students believe the subject is difficult and cannot pass it. One teacher stated; 'we cannot waste our time discussing and reading practical geography because it is difficult for them, such students lack some skills and they need some counseling and guidance.
5. Limited time to complete the 'wide' syllabus which is theory oriented and practical aspect taught separately by teachers, and led toward the external examinations. Most students claimed teachers had limited knowledge of statistics in geography, sketching and drawing graphs. Teachers give us theoretical knowledge only. Part time teachers give little information when they appear at school. They add on that teachers do not know how to use geography tools like hand compass, GIS and GPS equipment, even reading grid references, let alone handling computers.
6. The teachers blame students with poor attitude towards the subject while the teacher trainees feel some geography teachers have a problem of understanding the curriculum content which is wide. The English language used as medium of instruction hinders understanding of concepts or obtaining information from books by teachers as well as students.
7. Lack of proper assessment tools for practical geography, therefore, both teachers and students cannot get feedback which is very important pedagogical tool.
8. Negative attitude of students and complicated concepts like continental drift, sea floors spreading are too abstract for them to understand
9. Misconception of the subject and how to teach it, teachers believe fieldwork should be done in distant places only, ignoring the local environment.

10. The changing nature of geography content is a challenge to teachers who have no libraries with up-to-date information within easy reach. There is pressure on teachers to complete the syllabus which is very wide. Forty minutes for a lesson is too short according to teachers who participated in the study
11. Students fear topics with calculations, drawing graphs, and rocks formation. Contour lines confuse students and careless teachers make students fear the concept even more.
12. Teachers in day schools complained of student absenteeism making it difficult for them to catch up with others.
13. All teachers complained of large classes 70-100 in a class. The only suitable method we use in such a situation is lecture.

No collaboration, teamwork among geography teachers within the department. There was also lack of networking among schools in the region.

Solutions to the above challenges were suggested by teacher trainees as below:

1. Sensitize parents to support their students by giving them extra funds to buy instructional materials including textbooks. The government of Uganda should beef-up this effort by parents to provide more instructional materials.
2. Provide career guidance to the students with negative attitudes; by giving information on alternative jobs if geography is well done eg they can become urban planners, wetland conservationists, land surveyors, managers or even teachers.
3. Teachers should be given continuous professional development courses in the school or group of schools in the region so that they are updated on new trends in the subject. They will learn for example motivating teaching methods to inspire students instead of discouraging them. They will be helped to make relevant teaching aids to solve problems of abstract concepts.
4. Schools should set up libraries with relevant textbooks, atlases, internet access instead of the unreliable pamphlets. Teachers should borrow teaching resources from neighboring schools. Teamwork is another useful approach by teachers whereby various teachers are each allocated a topic to teach from the examination syllabus. This they hope will make them complete the syllabus in time.
5. Remedial classes during extra time created, eg use of weekends will help weak students or enable teachers complete the syllabus.
6. Make simple lockable shelves in classrooms to store teaching resources
7. Divide large classes or use dining halls, under trees
8. Give gifts to good teachers for motivation and reprimand absentee teachers. The good performing students should also be given gifts as well.
9. Recruit more qualified teachers or hire experts to teach students.

10. Identify and make use of resource persons in handling specific aspects in geography.

Discussions

The researcher believes that any teaching activity where the student is in charge/full participation is a practical aspect of learning. This to the researcher may be a debate, creation of a poem by the student, music dance and drama, games, reading aloud by students, drawing maps, drawing cross-sections, fieldwork, working on computers and many other activities in geography teaching and learning.

Basing on Objective one in this study, the teacher trainees identified only a few teaching activities where the students were in charge of their learning geography. The use of the lecture method was understandable; teachers used those methods which they experienced when they were students. Secondly, the large classes and small classrooms built for 40 students only dictate the kind of methods a teacher would use. Teachers were not exposed to interactive methods for large classes in their training (Kagoda and Najjuma 2013), therefore, they could not apply it in their classes. Lastly, the lecture method though criticized for promoting cramming, it exposes geographical facts which are important, useful and interesting helping in the development of concepts, generalizations and theories. There are good interesting facts in well researched lectures about, distant peoples, places and environment, this broadens their geographical horizon and prepares them to appreciate the existing similarities and differences on the earth's surface as well (Alam 2010).

Projects and group work were identified in schools with smaller classes and well qualified teachers especially in well-established government schools, Makerere college school, Old Kampala secondary school etc. Project work is a good idea in teaching geography because it enhances student's creativity and comprehension. It provides great opportunity for both teachers and students to discover the new ideas in learning. The teacher trainees, however, did not indicate the class or topics they were teaching.

Guided discovery and Question and answer are two methods used by all teachers in Uganda. However, nobody will fully explain what guided discovery means and its process as one of the methods of teaching. Some teachers explain that students are given work to do and they discover by themselves the answers to the questions given. Others say it is when students do library research or fieldwork.

Fieldwork to most teachers is more like an excursion, where students go to distant places to the national Parks, industries, and plantations. The teachers and students feel they have nothing to learn from the local environment which may be peasant agriculture, poor rural settlements, and the slums in urban areas and any other situation where the school might be situated. The teachers feel there is nothing to learn from such environments, they never critically think of issues of structural violence which may result into urban slums, street children, and the poor welfare of rural people and other causes of poverty as being part and parcel

of geography education. This explains why the poor children miss out when the so called fieldwork trips are organized for geography classes. This also explains why poor schools whose parents cannot afford instructional materials and such expenses miss out. Another cause is that their teachers do not have the time to go out since they are part-timers. Another important point is that it is no longer a question in the external examinations set at the end of senior six, thereby teachers ignoring fieldwork. This is similarly noted by Alam (2010) in India that this aspect was the least planned and most neglected part of school geography, fieldwork and excursions were rarely conducted in schools. He added on that globes, maps and other tools of geographical representations were scarcely available.

Observation and demonstration methods were identified by teacher trainees who went to well established schools like Makerere College, Old Kampala secondary School etc. These schools as mentioned before have qualified teachers, they use a variety of teaching methods, their students are bright and motivated. The teachers feel these students are worthy their effort and time to demonstrate to their students for example, how to draw cross-sections, read temperatures in weather station, how to draw graphs etc. The students are motivated to learn through observation of what they see. These are the students who will learn a lot through fieldwork study trips as they observe what is in the field.

Class activities are interchangeably used in this study to mean teaching methods and these include; Drawing sketches, cross-sections, panoramas, and line transects, reading maps, geographic information systems, statistics, graphs, and images photograph interpretation, watching video, other activities include measuring distances and calculating as well as quizzes. Practical activities of this nature are an assessment technique that provides students the opportunity to demonstrate their understanding and mastery of geographic skills. A geography teacher gets evidence of what the students know and can do in terms of analytical processes, decision-making processes and their ability to communicate through the manipulation of geographic data and the use of geographic skills. All schools use these methods because they appear in external examinations not for purposes of helping students developing life skills embedded in them. The students forget these invaluable skills immediately after the examinations. The students missing out on the above cannot be assisted through those activities to develop values and attitudes, coping and self-managing skills, communication and personal skills, they will not learn and understand geographical concepts to help them learn more about the environment (UNESCO 2012). It is important to note that some geography teachers cannot teach those geographic skills because they do not know them well enough to pass them on to their students. The teacher training colleges of today do not have geography laboratories including the biggest and oldest in the country, Makerere University, School of Education

Absence of geography laboratories, instructional materials like computers, maps, globes, survey equipment, measuring tapes, to mention a few, means all geography teachers graduating today and yesterday are not competent to teach graphical skills essential to the youth lives/needs in society. The graduates miss opportunities for developing personal skills for career development (Queensland University 2014)

Objective three is concerned with suggestions to fill the gaps identified. The idea of sensitizing parents to support their children in school may be difficult especially in third world schools. Such schools will continue running without textbooks, no funds for hiring qualified teachers, no fieldwork no instructional materials. The well to do schools, however, is in position to raise funds for their children. The parents and old boys/girls have been instrumental in setting up libraries for schools, however, nobody has thought of setting up geography laboratories in schools.

Continuous Professional development courses/workshops essential for updating teachers (Kagoda and Ezati 2014), however, most schools do not have funds. The Ministry of Education and Sports is supposed to do it on a regular basis, but none has been organized in recent times. Although the National Examinations Board has lamented the poor performance of Geography yet no workshop has been organized to retool the geography teachers. The researcher is tempted to say that the people who set examinations should be retooled so that they align the questions they set to the new trends in education; like the 21st century skills recommended by UNESCO (2012). Since teachers teach what appears in examinations the content and methods of teaching will be revolutionized.

It is true teachers get little salary and need to get extra money as a motivation, and this can be done by Boards of Governors working with Parent/Teacher organizations. The remedial classes on weekends will be done with this kind of incentive.

Lastly, networking and collaboration are important ways of helping schools grow academically and many other ways.

Conclusions

The teacher trainees demonstrated their potential in doing invaluable productive research. They identified gaps in geography education to be filled in and how to do it.

- It is clear that practical geography is not well taught because of lack of necessary teaching resources and some of the teachers are not well trained in that aspect.
- Some teachers teaching geography seem not to understand the curriculum probably due to language problems. Since the curriculum is examination oriented such teachers tend to be theoretical in their teaching.
- Schools lack relevant instructional materials and laboratories where tools for teaching geography can be safely stored and used when learning geography.

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