PHILOSOPHY & HUMAN SCIENCE

Some Concepts and Methods in the Domain of Educational Research

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1. Introduction

I selected the title for this article in order to associate it with two other pertinent publications. The first has enjoyed many accolades in educational investigations, a book by I.M. Omari (2011), *Concepts and Methods in Educational Research*. The second is an article that I wrote as thoughtfully as possible, an article that deserves the attention of anyone engaged in the advance of the educational enterprise. I entitled this article: *Research Methods: Special Challenges in the Domain of Education,* which appears in *Africa Tomorrow*, 17/1/ June 2015. Thus, for this article I thought of employing the words 'Some Concepts and Methods' because other concepts and methods were covered by the published article. The book I just mentioned, I.M. Omari (2011), *Concepts and Methods in Educational Research* is a real book which covers most of the concepts and methods in the domain of educational research.

The idea to write an article that focuses on 'Research' crystallized in my mind because of several facts. To highlight a few: (1) to contribute to the body of knowledge with a focus on some concepts and methods of research that can help young researchers. Omari (2011) offers evidence of such a need. He admits that those who are experienced know that research is often tedious, painfully slow and rarely spectacular at the early stage; (2) to respond to the call for 'Research and Publications,' normally extended to all academic staff members, and in a special way, in

the current academic year. The reference can be made to the workshop on 'Research' which took place on January 2, 2018 of which Professor Mkude from UDSM was invited to facilitate. During his presentation the Professor re-echoed the call for 'Research and Publications'. He described research as one of the three pillars (one facet of the triple mission) of a university. The other two pillars are: Teaching and Community-Relevant Services.

In Tanzania, the Professor attributed the notion of 'Community Relevant Universities' to the Father of the Nation, Mwalimu Nyerere. The Professor's attribution coincides with a major theme in one of Mwalimu's most celebrated books, namely, J.K. Nyerere, *Man and Development* (1976). To quote Mwalimu:

> What is it, then, that we require of those in our societies who have education? We require services to the community – and service in geometric progression according to the amount they have received (6-7).

He added,

> I have been appealing to all African universities and African university students as well as to others receiving higher education to be committed members of their society, and to design all their work for its services. … But the universities must be committed institutions too; committed to the growth and development of our societies. They must promote committed service – and therefore honest, truthful and selfless service (12-13).

Indeed, anyone who gives thoughtful attention to what Mwalimu has written in *Man and Development* may correctly attribute the emphases on 'Research' and the 'Research Universities' to the same great man, the Father of the Nation. In that book Mwalimu Nyerere advocates for 'Research' and the 'Research Universities.' He describes research as the traditional function of a learning institution. He calls all African Universities together with their students and personnel to deal objectively with the problems they investigate; they should analyse and describe them in a scientific manner; and from their accumulated knowledge they should suggest methods of dealing with them. Learning institutions should be centres of research.

2. Research as a Method for Acquiring Knowledge (Identifying Sources of Knowledge)

In his presentation Professor Mkude noted that a good number of scholars concur with him. To highlight a few: Kerlinger (2000), borrowing from Buchler (1955), has identified what he calls 'Four Methods of Knowing' – in other words, four methods to bring to life the sources of knowledge to which we have access:

i. The method of *tenacity*. People hold certain things to be true simply because they have learnt it or discovered it from their traditions, their religion or their faith. This is identical with what others call 'Tradition/Culture'. Religion, i.e., faith, enters here.

ii. The method of *authority*. The authority can be a person. For a long time, Tanzanians accepted almost everything that Nyerere said simply because they respected him as an authority. We have other important examples of those who have exercised a great impact on the world because of their authority: one easily thinks of Nyerere in Tanzania, Pope St. John Paul II and Mother Teresa for the whole world, Ghandhi in India, Mao Tsetung in China, Mohammed to all in the Islamic world, parents to their children, a teacher to his/her students, or Jesus Christ to all persons of all times.

iii. The method of *a priori*. This is known as the method of intuition. This is something based on the independent operations of a person's mind, on his or her personal principles. The a *priorist*, therefore, is a person who works by self-evident principles.

iv. The method of *science*. It is the scientific approach that is known as 'research'. That is, people arrive at a certain conclusion after carrying out a certain cognitive process that proceeds logically from beginning to end. This process may proceed through phases: identifying a problem; formulating a hypothesis; testing the hypothesis; gathering evidence; analysing the data that has been gathered; and, after a series of inductions and deductions, drawing a conclusion.

Mugenda & Mugenda (1999) have expanded the first three methods into four:

1) Life experiences: human persons learn much through what they encounter in life.
2) Through one's tradition, i.e., culture.
3) Through authority: parents, guardians, teachers, religious leaders, political leaders.
4) Through intuition/ perception; but this one is sometimes regarded as a mystery.

Not surprisingly, there are those like Omari (2011) who highlight the empirical character of the scientific approach. Indeed *Empiricism* is a method based on observables, experimentation and rigorous study. Omari suggests that the empirical method is the most reliable one for acquiring knowledge and information. The results obtained by this method, however, can be enshrouded with scepticism until they are replicated independently by other equally competent observers. Since the logic involved is inductive in nature, the results become more tenable and hence more trustworthy when replications consistently produce the same results. Eventually, the knowledge obtained becomes valid, reliable and dependable. Tenacity, intuition and authority, on the other hand, do not require the rigor of evidence, observation, verifiability and replication.

3.   Research and Scientific Method

Omari (2011) poses two questions: (i) *What, then, is research?* (ii) *How is research related to the scientific method?* He admits that the terms 'research' and 'scientific method' are sometimes used synonymously in educational discourse. Surely, the two terms have some common elements and some differences. Research is considered to be the more formal, systematic, organized, and intensive process of carrying on an investigation that may use a scientific method of analysis. Scientific method is an application of skills in problem identification, hypothesis formulation, observation, analysis and making valid conclusions. Similarly, Ruane (2005) uses the term *scientific knowhow* and commends the scientific approach because the information obtained through the

scientific process seems more reliable, i.e., more trustworthy, and seems to bring forth less error when the objectives of the research require only quantifiable, observable data.

3.1 Research

Mugenda & Mugenda (1999) define research in three ways:

One: Research is a diligent inquiry or a critical examination of a given phenomenon. Examples are: (1) an inquiry into what occasions poor performance in school, (2) an investigation into what causes water shortages, and (3) an inquiry into the reasons for low attendance in class.

Two: Research is a critical analysing and updating of conclusions or theories in order to take into account newly discovered facts.

Three: Research is a process of arriving at effective solutions to problems through a systematic collection of data from a sizable sample of the people affected by the problems under investigation, analyses of the data collected and a logically accurate interpretation of the data within the context of conclusions reached by other significant studies that concerned the same problems.

McMillan and Schumbetter (2001) define research as: 'A systematic process of collecting and logically analysing some data for some purposes.' Best (1977) defines research as: 'A systematic and objective analysis and recording or controlling of observations that may lead to certain conclusions.' Both of these definitions have certain points in common: any research has to be systematic and aim at certain, well-articulated conclusions. Systematic procedures and certain orderly steps have to be followed. Omission of any step may provoke a wrong conclusion.

3.2 The Research Continuum and Processes

Omari (2011) speaks of the research continuum and processes. But then he notes that one cannot follow a layout of means and procedures without knowing one's destination. In his words, 'Do not start a journey before you know where you are going.' This means that research has to be understood as a series of interlocking steps and processes that have a well-identified beginning and an end. The person who wants to conduct research (the researcher)

should visualize the whole of that continuum so as to be in control of the processes while leaving eyes, ears and mind open for any unplanned findings and eventualities.

Omari (2011) takes pains to broach a sub-topic: 'Characterising the Research Activity and Processes'. Here he suggests that research is basically a mental activity first, and then a physical activity. It consists of a variety of mental processes and steps. The documents which we see in the form of research papers or dissertations are primarily the products of quite complex mental processes. In fact, this is quite comparable to the mental activity of the builder of a good house, i.e., an architect. He should have the picture of the whole house, including the important pieces of furniture that will be in each room and how they will be arranged, before he starts making the foundation. In practice, successful research depends on utilising the art and skills most needed in order to choose the proper paths for reaching the goal area.

4. Research Paradigm, Type and Design

Mugenda & Mugenda (1999) admit that various authors have classified research differently from each other. There are times when the three terms Paradigm, Type and Design have been employed interchangeably. But some scholars have tried to distinguish them. Why?

4.1 Research Paradigm

Omari (2011) limits the term 'Paradigm' to an approach or school of thought. He presents two research paradigms: quantitative and qualitative. Mugenda & Mugenda (1999) add their own particular shade to these two paradigms: for them, quantitative and qualitative identify broad classifications of research.

4.2 Research Type

Mugenda & Mugenda (1999) apply the term 'Research Type' to the classification of research by purpose. The three types of research according to purpose are: basic research, applied research and action research.

Mugenda & Mugenda (1999) define the three types of research as follows:

Basic Research: This is also called 'pure' or 'fundamental' research. It rests on existing structures and processes in order to render itself understandable.

Applied Research: This is the research carried out for the purpose of applying a theory to concrete circumstances or cases, or testing the explanatory value of a theory, or evaluating its usefulness in solving problems.

Action Research: This is a research conducted with the primary intention of solving a specific, immediate and concrete problem in a local setting.

Other authors add other types: evaluative research, analytical research and fundamental research. Within this schema, terms are defined as follows:

i. **Basic Research**: This is the research carried out for the purpose of developing knowledge. It is always focused on the verification of theories.

ii. **Applied Research**: This is the type of research that an investigator performs in order to address or solve a particular problem.

iii. **Evaluative Research**: This is the research conducted in order to measure or assess the level of achievement of a certain project.

iv. **Analytical Research**: This is the research that uses the facts available and analyses them in order to make a critical evaluation of the gestalt of the entire project.

v. **Fundamental Research**: This is the kind of research carried out to increase understanding of fundamental principles.

4.3 Research Design

Omari (2011) identifies ten designs which in his view are the most common:

      i.   Historical,

     ii.   Survey,

    iii.   Developmental,

    iv.   Case Study,

     v.   Correlation,

    vi.   Causal Comparative,

vii. True Experimental,

viii. Quasi-Experimental,

ix. Action,

x. Evaluation.

5. What Makes for a Good Research Title/Topic

Identifying an area of research and formulating a good research topic are challenging for many young researchers. Omari (2011:24) notes that one of the most difficult phases of the graduate research project is the choice of a suitable research problem. Beginners are likely to select a problem that is much too broad in scope. This may be due to their lack of understanding of the nature of research and the systematic problem-solving activity involved. It may also be due to their enthusiasm but naïve desire to solve an important problem quickly and immediately.

Omari (2011) qualifies a good research topic as follows:

1) It should be clear and concise: maximum two lines (other sources recommend that the title not have more than twenty words).

2) It should reflect the content of the study.

Mugenda & Mugenda (1999) identify three distinct aspects that should be clearly detectable in a good research topic. They include: (i) the major variables of the research, (ii) the target population of the research, and (iii) the site or geographical location of the research.

Major variables: Kombo & Tromp (2006) define variables as the attributes or qualities of the experimental events that researchers measure or record. There are independent variables, dependent variables, control variables, and subject variables.

Target population: Kombo & Tromp (2006) define the target population as a group of individuals, objects or items from which samples are taken for measurement. It is important for the researcher to find out as much as possible about the target population. That includes some of the overall demographics, i.e., subject variables, such as age, gender, schooling, job experience, religion and so forth.

The research area location: Kombo & Tromp (2006) note that the selection of a research site relevant to the objectives of the research and a meaningful description of the site are essential. Knowing with precision where a researcher collected the data and easily noticing the relevance of the site and target group to the research objectives fortifies the significance of the data interpretation and the ensuing conclusions.

5.1 Challenges Encountered in Title/Topic Selecting, Structuring and Developing

Kombo & Tromp (2006) admit that beginners in research face some common challenges when formulating the title and selecting the topic. There are four common challenges:

i.   Choosing a title which is specific. The topic should be specific and not open to varied interpretations. That means even the words used for the title should be specific and not open to varied interpretations.

ii.   Do not be wordy in the designation of the topic, and do not say anything that inadvertently broadens the topic or makes it ambiguous. A concise articulation of the topic is more effective than a wordy one which fogs the main points of the research. In brief topic variables should be easily identifiable. All words which are not necessary for the topic should be omitted to keep the title clear with the variables well specified.

iii. Exercise intelligence in formulating and structuring topics. Readers should be able to grasp the essentials of the topic immediately.

iv.   Be consistent: the formulation/structure of the topic should manifest internal consistency and should tally with the research objectives.

Omari (2011) notes that one of the most difficult phases of the graduate research project is the choice of a suitable research problem. Beginners are likely to select a problem that is much too broad in scope. This may be due to their lack of understanding and/or experience when it comes to the nature of research and the systematic problem-solving activity involved. It may also be due to their enthusiasm but naïve desire to solve an important problem

quickly and immediately. Omari (2011) points out that those who are experienced know that research is often tedious, painfully slow and rarely spectacular at the early stages.

6. Chapters of Educational Research Proposals & Reports

Scholars slightly vary in their suggestions concerning the number of chapters and the style for the titles for the chapters. Indeed in some instances the scholars are really agreeing with each other but are just using different terminology.

Kombo & Tromp (2006) advocate for five chapters while Omari (2011) advocates for six chapters. However, many scholars agree on the format of five chapters and the style of titles suggested by Witek & Ogalo (2012).

6.1 Chapter One: Introduction

In educational research, chapter one is called the 'Introduction'. Several elements constitute it. Background of the Study, Problem Statement, Research Questions/ Hypotheses/ Objectives, Significance of the Study, Theoretical Framework, and Conceptual Framework are usually the components of the Introduction.

6.1.1 The Background of the Study

What is the background of a study? Kombo & Tromp (2006) describe the background of a study as: 'A brief overview of the problem the researcher aspires to tackle; normally, it is a summary of the information in the literature review.' Thus, it is supposed to be brief and specific!

6.1.2 Problem Statement

Kombo & Tromp (2006) note that a 'research problem' refers to an issue or concern that puzzles the researcher and so impels him/her to carry out the research. Therefore, 'Problem Statement' is one of the essential parts of the research. 'Problem Statement' should state with clarity the real problem and what influenced the researcher to think of undertaking such tedious work. It is the 'Problem Statement' that shows what the researcher intends to do and its urgency.

In other words, the 'Problem Statement' should identify the problem, what is known about the problem and what is still lacking in the academic community's understanding of the problem, i.e., the knowledge gap the researcher intends to fill. In the exposition of the Problem Statement a bit of literature with statistical evidence about the problem should be included. On pages 34-35 of their book, Kombo & Tromp present three samples of focused and effective statements. Kombo & Tromp (2006) highlight the steps that should be followed for a researcher to come up with an effective problem statement. This includes: (i) Reflection, (ii) Identification, (iii) Formulation, and (iv) Justification.

Krathwohl & Smith (2005) emphasize the *Focused Problem Statement*. They admit that composing such a statement is a skill. In addition, they admit that good problem statements are the results of a balance between *competence* and *brevity*. To achieve this balance, one needs to be careful with the opening sentences of the problem statement. The opening sentences suggest to the reader whether the study will be creative and interesting or just routine. The opening statement should convince the reader that the project is important.

Indeed, opening sentences should draw the person's attention directly to the problem and its underpinnings. The language of the opening statement should be convincing and attractive to the readers. Well-selected phrases or expressions from the literature and from statistics can serve that purpose.

Kombo & Tromp (2006) highlight four challenges in the composition of problem statements:

  i. Defining the parameters of the research problem: some statements do not express adequately the contours of the problem

  ii. Lack of integrity between the research problem, the objectives and the literature.

  iii. Lack of urgency: some statements do not reflect the urgency for the study.

  iv. Emotional language: some research statements lack objectivity. Instead they only show researchers' subjective emotional views.

6.1.3 The Research Objectives, Questions & Hypotheses

Omari (2011) notes that the above mentioned elements are intricately related to each other. Objectives, hypotheses and questions blossom forth from the Research Problem. Omari gives the following example:

The Research Problem: *Differences* in the Performance of Mathematics between boys and girls.

The Research Purpose: To find out the manner in which girls and boys *differ* in the performance in mathematics.

The Research Objective: To find out if indeed boys and girls *differ* in mathematics.

The Research Task: Prove that girls *differ* from boys in mathematics.

The Research Question: What are the *differences* between boys and girls in the scores that they earn in a mathematics test?

Omari (2011) notes that there should not be too many research objectives, hypotheses and questions. Two or three may be adequate; perhaps a maximum of four is tolerable. There should be no more than one main research objective and question. From the main objective, several specific objectives may be developed. And, if one has three specific research objectives, then he/she will also need three specific research questions and in the same order.

6.1.4 Operational Definitions of Variables

Sometimes a title may have concepts which do not have specific meanings – in other words, they may be vague or may be open to a variety of interpretations. Examples are giftedness, intelligence, quality education and youth. The researcher should define or give the meaning he/she attaches to terms in the context of his/her study (Omari, 2011; Krathwohl & Smith, 2005).

6.2 Chapter Two: Literature Review

In educational research, chapter two constitutes the Literature Review. Mugenda & Mugenda (1999) observe that: "The review of literature involves the systematic identification, location, and analysis of documents containing information related to the research problem being investigated. The literature review should

be extensive and thorough because it is aimed at obtaining detailed knowledge of the topic being studied." In other words, 'Literature Review' involves locating, reading and evaluating reports of previous studies, observations and opinions related to the planned study. Hence it leads to appreciating and understanding the research that has already been done in one's area of interest; and it clarifies whether the present investigation is more or less a replication of research that others have already undertaken or whether the present research is a step forward that, as far as the researcher can ascertain, no one else has attempted.

Krathwohl & Smith (2005) note that 'no project starts *de novo'*. This may amount to saying that there is nothing new under the sun. Regardless of the topic one may come up with, someone, somewhere might have already tackled it. It may not be exactly the same, but related. Any researcher aiming to carry out a study should know what has been done or what is known about that study area and should acknowledge that in the problem statement and show evidence for it in the literature review. Krathwohl & Smith: 'Be highly selective in this section, citing only those studies that form the base from which your study is building.' Then they highlight several challenges facing some young researchers. "The most common error is including too many references and doing too little with them."

6.3 Chapter Three: Methodology

In educational research, chapter three is usually entitled: *Research Methodology*, which is defined by Opie (2004) as the theoretical procedure for obtaining the knowledge that the researcher hopes to discover. It refers to the overall approach to a particular research project, to the overarching strategy that one has adopted. The decisions about the methodology and procedures to be used in any research project are usually influenced by several factors, such as: what variables must be considered, what can actually be done, what is practical and feasible, situational factors of various kinds, and personal predilection and interests.

The chapter has several elements: Research Design; Target Population; Description of the Sample and Sampling Procedures; Description of the Data Collection Instruments; Validity,

Reliability, and Stability of the Instruments; Description of the Data Collection Procedures; Research Ethics and related issues; Description of Data Organization; and Data Analysis Procedures.

6.3.1 Research Design

Gay (1996) defines research design as a systematic attempt to collect data from a sample in order to determine the current status of the population with respect to one or more variables.

6.3.2 The Research Site/Location

Kombo & Tromp (2006) note that the selection of a research site and a description that shows its relevance to the research is essential. It influences the usefulness of the information produced and facilitates data interpretation. Therefore, the researcher should appropriately choose the site which will give him/her the information required. That can be achieved through the following procedure:

i.   Identify the largest area that is relevant to the research questions and objectives (like Morogoro Municipality or Morogoro Region).

ii. Through a progressive elimination reduce it to the manageable size or actual site where data will be collected (e.g., one division or one district). For actual sites the researcher will have to make site visits.

According to Witek and Ogalo (2012), description of the research site involves its name (if possible, also its meaning), location, population, geographical features (if unknown to readers), social features, its socio-economic activities, educational and economic infrastructure, and anything else relevant to the research objectives.

6.3.3 Target Population

Kasomo (2004) defines population as any group of institutions, people or objectives that have at least one characteristic in common, a characteristic that is directly linked to the research objectives. It is the aggregate of all cases that conform to some designated set of specifications. Krathwohl and Smith (2005) speak of a sub-heading: *'Participants – Population and Sample'*. They

highlight a point that must not be taken lightly: 'For all studies involving gathering data from people, a description of who they are is essential to determining the potential generalizability of the study findings. The characteristics of the population to which the sample studied belongs define the group to whom the study's results may transfer.' Generalizability is a crucial issue for all research.[1]

Last but not least, Kombo and Tromp (2006) define target population as a group of individuals, objects or items from which samples are taken for measurement. It is the entire group of persons or elements that have at least one thing(s) in common. Again the common element is directly linked to the research's principal objectives.

It is important for the researcher to find out as much as possible about the study population. That includes some of the subject variables, such as age and gender. The knowledge of the population will enable the researcher to come up with a sample that is truly representative of the population and will help him or her to choose the proper instruments that are reliable and valid precisely for that population, and hence the anticipated results will carry more credibility. Knowledge of the population also helps the researcher to interpret the findings.

The researcher may start with larger population. Then, through progressive elimination the researcher will end up with a smaller, more manageable population size from which a representative sample is drawn.

6.3.4 Sample

Omari (2011) states: A sample is a small proportion of a population selected for observation and analysis. A sample should represent the characteristics of the entire population. Contrary to some popular opinions, samples should be carefully selected (not selected haphazardly or carelessly or without

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[1] It must be noted that lack of generalizability does not necessarily depreciate the importance of research findings. What a researcher discovers in one small group in a single location may shed light on several other studies that may have been conducted with very large samples representing very large populations (editor's note).

a recognizable rationale). In other words, samples are chosen in a systematic way so that chance errors are minimized and probabilistic reasoning involved in generalizations can be utilized. If the researcher chooses his or her samples randomly, he or she has to follow strict rules for random sampling so that he or she does not skew the results.

The sample should be formed by respondents from the whole actual site. The example Kombo & Tromp (2006) give is: 'Someone identified Nairobi City Municipality as his large research site. Through progressive elimination he ended up with only Mukuru Division which has 17 streets/branches and the population of 500,000 people. So, the sample was formed by respondents drawn from all the 17 streets.' If one compares this example to the Morogoro Municipality context one may start with the whole Morogoro Municipality as his large research site. Through progressive elimination he may end up with only Kihonda Division which has 10 streets and the population of 500 people. So, the sample of 100 respondents will be formed by respondents drawn from all the 10 streets and from the whole population of 500 people.

6.3.5 What Is Involved in Sampling

According to Peil (1995), sampling is the selection of a part to represent the whole. Every stage of a research process needs some kind of sampling because it is never possible to include all or everything be it in literature, persons and information no matter how relevant or useful available resources may seem to be. Thus, sampling takes place in the selection of the topic, the location, the people to be studied, the concepts and variables to be used, the data which are collected and methods employed and the relationships on which the analysis is focused. Of all the determinants of what is to be included and what is to be omitted in the samples, economic, time constraints and availability of sample candidates predominate.

6.3.6 Data Collection Instruments

According to Kothari (2004), there are several methods of collecting primary data particularly in survey and descriptive research. The important ones are: observation, interview, and questionnaire.

6.3.7 Validity, Reliability, and Stability

Validity implies that we want to obtain what we are supposed to measure (Kasomo, 2006). Nachmias and Nachmias (1996) state that validity is concerned with the question, *Am I measuring what I intend to measure?* Validity therefore, is the extent to which the research instrument measures what it is supposed to be measuring. Kasomo (2006) defines reliability as the degree of consistency demonstrated by instruments in a study. Thus, reliability implies dependability of an instrument or procedure used in order to obtain the required information. Closely related to reliability is stability: when responses remain invariant over time, the instrument is considered stable.

6.3.8 Description of the Data Collection Procedures

The term data collection refers to the gathering of specific information aimed at providing or refuting some facts or hypotheses (Kombo and Tromp, 2006). Having defined the sample, reflected on the research design, prepared the research instruments, defined the data to be collected, and having obtained the Permission Letter – i.e., the Research Permit – from the Department, the researcher embarks on Data Collection.

6.3.9 Ethical Issues in Educational Research

Omari (2011) notes that research is supposed to be a clean, sophisticated enterprise. The research should be conducted with the highest standards of moral and ethical considerations. It is the researcher who should behave and do the research in a manner that does not compromise the image of the enterprise in the public eyes. He lists the following twelve key ethical areas of concern in Education Research:

One: Getting informed consent from adults when children are involved is obligatory.

Two: Proper and dignified access to information and participants is of utmost importance

Three: Clarity of purpose, honesty, candour, and decent treatment of the subjects of the research should be greatly upheld.

Four: Ethical dilemmas should be resolved in favour of participants.

Five: National regulations guiding the research enterprise should be followed.

Six: Protection issues should be addressed: possible abuse, harm of the participants, future users of the research, unacceptable manipulation of data.

Seven: Scientific misconduct, i.e., the failure to conform to the highest standards of conduct of a given professional group is intolerable.

Eight: The social value and benefits of the study are to be emphasized.

Nine: All efforts should be made to make sure that the study is scientifically valid, sound and conducted by competent people.

Ten: Vulnerable groups and individuals deserve special regard and sensitivity.

Eleven: If studies are for a long period, such as longitudinal studies, regular safety checks should be conducted.

Twelve: Fair, consistent, and equitable selection of participants should always be the normal rule for proceeding.

Peil (1995) observes that as a general principle, the right to knowledge must be balanced by the rights to personal and community integrity and privacy. That places limit on *where*, *when* and *how* the research can be carried out. The main areas of concern vary from one type of research to another. Before entering into the study the researcher has to weigh the costs and benefits, ensuring that the after-effects are not damaging to either individuals or the community.

In other words, in as much as research is a search for knowledge according to the parameters of truth some facts may not be for exposure or discussion. The decision to keep secrecy may be to preserve personal and community integrity and privacy; it may also be for security or political/administrative purposes. We all know that there are certain places or documents which are not accessible to every person: there are places, for example, where photographs are not allowed. We also know that in some communities till today Sex Education (which is encouraged today as part of Education on HIV/AIDS Control and as part of the Ethical Decision to abstain until one is legally married) is still a taboo in some societies. Any

research related to such aspects may find challenges in data collection; some respondents may not cooperate or may not give true information.

In order to get informed consent, Peil (1995) offers five suggestions which should be clear to participants:

    i. Who is sponsoring the research?

    ii. What area is being investigated?

    iii. How much of their time will the research take?

    iv. Will there be confidentiality that covers all the information given?

    v. How will the results be used?

6.4 Chapter Four: Data Analysis and Discussion

According to Kombo & Tromp (2006), the fourth chapter is typically named: Data Analysis and Discussion. It involves data organization from the initial stage of pre-processing, to developing a coding scheme, to deciding on the data storage and the choice for statistical software. The term processing implies editing, coding, classifying, and tabulating the collected data so that they are amenable to analysis. Kothari (2004) notes that data analysis refers to the computation of certain measures that make it possible to make comparisons and to discern patterns of relationships existing among the data categories.

Omari (2011) refers to 'thinking skills' that have to do with making arguments and settling knowledge claims and disputes. For that one needs to be critical and to be able to accommodate contraries. In other words, this chapter interprets and explains the findings with regard to the study objectives and in relationship to past findings reported in the Literature Review.

6.5 Chapter Five: Summary, Conclusion and Recommendations

According to Kombo and Tromp (2006) chapter five is given the name: 'Summary, Conclusion and Recommendations'. This chapter gives the summary of the study and the implications of the findings, the conclusion and recommendations; it also suggests areas that need further research.

7.   The Research Proposal

Kombo & Tromp (2006) anchor the definition of a 'Proposal' in the word 'to propose' which means, 'to put forward; to suggest, to intend or to advise.' A proposal, therefore, refers to suggestions, intentions, plans or schemes. A Research Proposal, therefore, can be referred to as a 'Research Plan, Suggestion or Request.' A Research Proposal includes the first three chapters: <u>Introduction</u>, <u>Review of Related Literature</u> and <u>Research Methodology</u>. Before Chapter One there are Preliminary Pages. In the proposal, the researcher should identify the References and Appendices after the third chapter. The Proposal uses the Future Tense. Highlighting the same three main parts of the Proposal, but using slightly different wording, Omari (2011) calls them items for possible inclusion in a Research Proposal.

8.   The Research Project/Report

This is the final work of a Research Project undertaking. The whole content of the Proposal (if it was approved) is carried over to the Research Project. But it is updated to reflect the characteristics of the Research Report. In other words, it is not a research proposal. The transformation takes place by: adding chapters four and five, changing the future tense used in the proposal to the past tense of the research already conducted and making sure that the added chapters four and five are also reflected in the Abstract.

9.   The Preliminaries and Appendices

According to the Oxford Advanced Learners' Dictionary (1989) the term 'Preliminary/ies' refers to what comes before the main item. The term 'Appendix/ces' refers to what comes after the main item/s. The content of the Preliminaries and Appendices may vary from one scholar to another. In the context of the 'Format of the Research Document' the main items are chapters one to five. Therefore, preliminaries are the items that precede the first chapter. Appendices refer to the items that follow the fifth chapter. Since the researcher already included the References and Appendices after the third chapter in the proposal, he or she should simply place

them after the fifth chapter in the report. The appendices always follow the references.

9.1 The Preliminaries

For the Preliminaries, Witek & Ogalo (2012:102) list eight items:

  i.   cover page,
  ii.   title page,
  iii. certification,
  iv.   declaration and copyright,
  v.   acknowledgement,
  vi.   dedication,
  vii. abstract,
  viii. table of contents.

Kombo & Tromp (2006:156), on the other hand, list five items:

  i.   cover page,
  ii. declaration,
  iii. abstract,
  iv. abbreviations and acronyms,
  v.   table of contents.

NB: On what to include in the preliminary pages and appendices students should listen to their supervisors. In some cases, institutions, supervisors, or programmes may slightly differ.

9.1.1 The Abstract

The Preliminaries include the abstract. Omari (2011) notes that "an abstract is a concise and succinct summary of a long document, capturing all the essentials, or central message of that work" (p.135). The abstract is supposed to be the best of the researcher's work. It is written last but placed first within the Preliminary pages. One needs skill and time to write it well. The abstract is focused on facts and key arguments only. Therefore, the abstract of the Proposal should cover chapters one, two and three while the one of the Research Project should cover all five chapters.

According to Omari (2011) the abstract:

  i. attracts the attention of the reader to the most salient and important parts of the work. Therefore, it should be very well

thought out, logically developed, of good taste, with the right pitch. It should be reader friendly and attractive in style.

ii. increases availability to a larger and wider range of audience in an easy and handy way, like a short report.

iii. shows itself to be user friendly such that busy executives, such as ministers, permanent secretaries and professors, may find space in their busy schedules to read and enjoy it, and get the gist of the whole work at a glance.

According to Omari (2011, pp. 135-136), the abstract should not be structured with subheadings; but it should contain the following information in not more than 300 words, or not more than one page. It should contain the following information:

i. The title of the work in full as it appears on the cover, plus the author's name in full.

ii. Statement of the problem, objectives/research questions, hypotheses.

iii. Methods used.

iv. The primary results.

v. The most significant conclusions and recommendations.

9.2 Appendices

Appendices refer to the items that are placed after the references. The references stand on their own and are placed immediately after chapter three of the research proposal or chapter five of the research report. The appendices always follow immediately upon the references.

Kombo & Tromp (2006) state that appendices should be devoted to those aspects of the project that are of secondary interest to the reader. Some of the items which are typically included in the appendices are: (i) pictures, (ii) diagrams, (iii) tables, (iv) research instruments, (v) copies of letters received from respondents, (vi) the budget, or (vii) the work plan. It is up to the researcher to organize the appendices in a way that makes logical sense.

10. Writing the Research Report

10.1 Skills in Writing the Research Report

Omari (2011) notes that writing the Research Report is both an <u>art</u> and a <u>science</u>. It is an <u>art</u> because no matter how much we learn, practice and over learn, not all of us can become good writers as William Shakespeare or Mwalimu Nyerere. Indeed, be it making a speech or writing a report the four skills identified by Omari (2011) are important:

a. Mastery of the subject matter which is the focus of the research.
b. Thinking skills.
c. Writing skills.
d. Organization and presentation of the ideas.

It is a <u>science</u> because report writing should follow certain principles and should meet certain acceptable standards. To mention a few:

a. A logically arranged hierarchy of ideas.
b. Correctly placed punctuation marks.
c. The art of good writing.

Omari (2011) lists six punctuation marks which are commonly used in writing, namely, the period, the question mark, the exclamation mark, the comma, the colon and the semicolon.

Indeed, a piece of work which is well written is appreciated and enjoyed by the readers. Omari (2011) remarks: "There is nothing as frustrating in reading a paper and realizing that there is inconsistency in style of citation, use of upper and lower case, paragraphing, use of nouns, pronouns, tenses, quotations, highlights, hierarchy of ideas and parts of speech" (129).

10.2 Typographical Norms

Owczarek & Ndug'u (2002) admit that one of the challenges both students and lecturers have faced and may continue facing is lack of a common position on the bibliographical reference style (typographical norms) for term papers, theses and dissertations (research projects). They admit that several attempts have been made with variations corresponding to a predilection for either the

British system or the American system. Tangaza College, for example, came up with a set of typographical norms that has six elements: format, characters, outline of the main divisions, titles, headers and footnotes.

Witek & Ogalo (2012) agree with the observation made by Owczarek & Ndug'u (2002). To address the challenge that Owczarek & Ndug'u posed, they collaborated to publish a manual entitled, *Typographical Norms: An Aid for Preparing Research Papers*, printed and disseminated by Jordan University College in 2012. We hope this serves the purposes and intentions of the researchers who refer to its norms. Surely, with all these references at our disposal, there is no excuse for any researcher to fail to abide by acceptable typographical norms, whether it is the British System or the American System.

Conclusion

The writer believes that this article meets its objectives. It provides some answers to some questions which keep on rising to the surface in the domain of Educational Research – e.g., *Why is there research at the higher learning institutions like JUCO?*

It is not difficult to affirm Omari's observation (2011) that those who are experienced know that research is often tedious, painfully slow and rarely spectacular at the early stages. Research needs diligence, focus, a series of logical steps, skills, theoretical work, practical work, mental work and physical work. The research can only be successful if he or she accepts with gratitude all the resources both material and human that are available to him and her. The researcher needs the cooperation of a number of persons, both peers and those experienced in the domain of research.

The writer believes that this article gives evidence that a good Research Project is the product of an individual's hard work. On that score, Rogers and Viles (2003) observe that the emphasis in a dissertation is for someone to do something original; it is the originality that sets the dissertation apart; it is the originality that makes each dissertation unique. This seems to be what Omari (2011) means by the words: *Research is the Great Journey of the Researcher*. The researcher owns the research. Therefore, it is of great importance that the researcher see the totality of all the

choices and decisions that have to be made as he/she traverses the various stages of research activities. In other words, doing research is both an art and a science. It is an art because the product depends on the decisions and choices made as one meanders from one level to another. It is also a science because there are some principles of cognitive process that should be observed for the production of credible research.

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