RESEARCH METHOD

Prof. OBADIAH OGHOERORE ALEGBE PhD

Electronics Engineer

Professor of Computer Engineering Universidad Nacional de Tres de Febrero Buenos Aires Argentina

Professor of Information Engineering Universidad de Belgrano Buenos Aires Argentina

Professor Collegium Ovirium Buenos Aires Argentina

Table of Contents:

Chapter 1.

Introduction:

Before writing about Research Method, we shall go through basic meaning of Research.

Research can be broken into two words Re-search which means search again. Yet this word has been used and continues to be used and shall continue to be used by all academic class especially when we investigate.

Research as known till now has only been based on academic or written research, whereas research is as old as mankind. We shall briefly touch the matter of ancient research in our conclusion and do hope our suggestion will open knew scientific scope of research to be pursued.

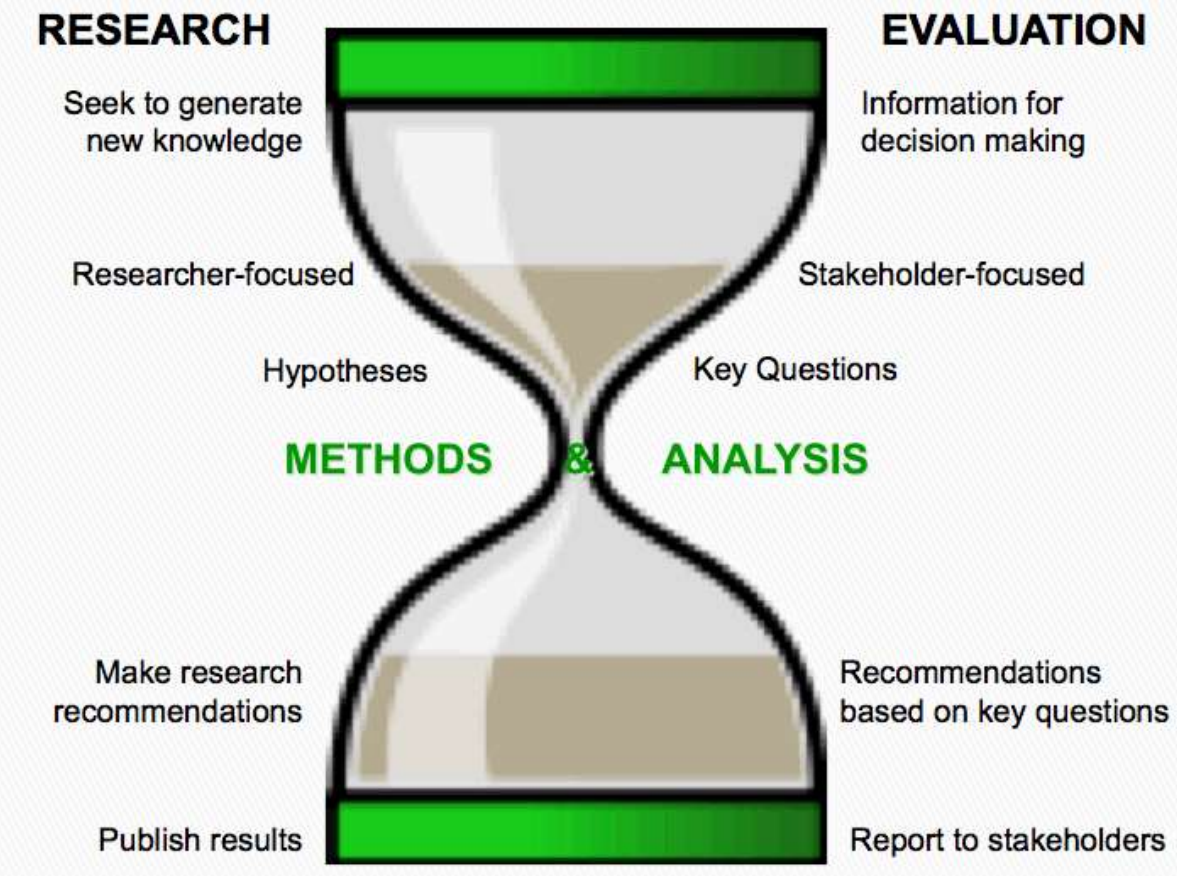
Martyn Shuttleworth define Research as “In the broadest sense of the word, the definition of research includes any gathering of data, information and facts for the advancement of knowledge”.

John. W. Creswell(2008) defined Research as “A process of steps used to collect and analyze information to increase the understanding of a topic or issue”.

These two definitions are enough to introduce us into the meaning of Research. In fact if we put one hundred Philosophers together and ask them to define the word Research, they will all use different expressions to define it but the nucleus will still be the same. From these two, it is about gathering information and processing them. The gathering of information depends on the environment and the processing depends on human being. And if the processor is not honest or lacks moral values, his research becomes a danger to mankind. This is the problem I

have with researches sponsored by the mighty companies looking for market to increase their sales and thus have influenced Researches which benefit them.

Before discussing each chapter enumerated, we will make an overview conduction of researches and methods. There is a model structure of research called Hourglass Model Structure of Research. John LaVelle in his article Describing Evaluation presented Hourglass as shown below:



The concept of Hourglass is that we open a very wide spectrum of Research while keeping the focus of Research the method used in the project and gradually closed on to the goal and the research spectrum slims down (like the neck of the hourglass) as represented at the middle of the glass where findings are analyzed. It is like closing in on the point. The question is how do we know what to eliminate to reduce the spectrum? The human factor is at play here and conclusion can only be accepted relatively. After this neck of the hourglass, we open up debates and discussion to larger space on this research to arrive at the results.

Human factor play important part in this result, when research is paid for and directed to the market to make money, security gives way to conspiracy.

John W. Caswell show that some major steps to conduct research are:”

-Identification of Research Problem.

-Literature Review.

-Specifying the purpose of Research.

-Determine specific research questions or hypotheses.

-Data Collection.

-Analyzing and interpreting Data.

-Reporting and evaluating research.

-Communicating the research findings and possibly, recommendations”.

Although the points stated are basic process, it must be noted and viewed as ever changing process. The points noted above are represented by the hourglass where Analyzing and Interpretation start from the neck of the hourglass.

MIT published Research Methods and Experimental Design by Human Supervisory and Control in April 2004 in which it stated Research Method and Design of Experiments which also makes clear the Hourglass Method. We are going into the stated work:

It breaks the methods into two. Qualitative and Quantitative. For both methods it states that there must be:”

- Understanding of the relationship between objectives (research question) and variables as critical.
- It must be known that Information is not equal to Data. That is Information = Data + Analysis.
- Planning in advance is a must and should include how data will be analyzed” .

I want to state here that these methods as stated above can provide relatively acceptable results but may not be absolutely accurate because it depends on the questions we ask and the answer giving. I give an example. In African tradition, a man cannot say how many wives he has because they are blessings from God and

thus they must not be counted. A man or a woman cannot say how many children he or she has because they are blessings from God and they must not be measured. In my Urhobo ethnic, someone with three children will say he/she has three fingers, and to ask for how many boys or girls is a taboo. People have the right to preserve their tradition and to judge a tradition from an outside view is wrong especially when the people with those their traditional values survived all human and natural phenomenon for thousands of years. This makes statistics very difficult in Africa and many measurements done in Africa are not reliable. Education must be available for all first before we know how to set questions and process their answers. Education must not be based on outside imposed curriculum but rather on their own sociology, but it is universally accepted a curriculum such as that of Mathematics and Applied Mathematics. Language Arts must respect their sociology can be introduced. Take for example, the word Marriage is wrongly translated. In African Tradition there is no Marriage nor Civil Union, human relationship in Africa is either friend (or not friend) and kinsmanship. Kinsmanship is either by direct blood or indirect blood. Under the indirect blood is that which joins a woman to a man (which is not marriage), it is an Institution built on spiritual values with protocols which includes reverence within the extended families of the two. The home of the two is a temple and the bed the two sleeps on is a sanctuary where the rituals for offsprings are made, that is the bed is the shrine of the fountain of life. When that man dies, only his offsprings inherit him, that is if he had five wives his properties are divided into five because every woman is a gate and each set of children take a part. When a woman dies, the husband does not inherit her, rather it is her offsprings that share her property. If she had children for more than one man, all the children will sit down under the supervision of elders and split her property. If she was with a man and no child at all in her life, her properties are given to her family by birth. Since we talk about Institution of extended family system, Widowhood or Orphans do not exist under African tradition, all Africans born at home and abroad belong to an extended family. Based on this how do you carry out a research based on European and American sociology in Africa, surely the results will be absolutely wrong. Another wrong translation is the Idols in the sanctuary which European called gods. There is an error, they are not gods, they are intermediaries' equivalent to the Roman Catholic Saints. In fact, Africa is the only monotheist Continent because in all Africa culture there is only one Supreme Being that created the Universe and the Idols are the intermediaries though which communications are made with Him. Yes Africa believe Him corresponds. I used the word communications, it is a very complex word and its explanation is outside this scope. Based on this a Research can only be acceptable if first we teach the people to read and write, then we introduce mathematics, then there is a base for communication, the together with the people we learn from each other to find out what we have in common and what

we do not. It is then we can have results that are more honest. All measurements done in Africa by Europeans and Americans have lots of errors and even to judge a culture from the viewpoint of another is also wrong. I will add one more example. My cousin who studied in England and returned home to a very good position in the civil service fell sick to the point of death in 1970 and when he recovered, someone told him that there was a witch around him, so he called all his children from different women and asked them one by one who was a witch, all but one girl of four years said she was a witch. Very unjust indeed. But good an elder who heard what happened told him that such a question should not be put to a child because the child in his/her innocence may not give the correct answer.

So based on my narration above how do we make a qualitative research? How do we state the relationship between objectives and variables? How do we get information based on Data and Analysis? All is just relative, no result is absolute.

The MIT publication consulted also gives guide to Qualitative and Quantitave Research Methods which I lay out below:"

Qualitative Research Methods:

- *Social and cultural phenomenon.*
- *Case studies.*
- *Focus groups.*
- *Observations.*
- *Usability testing (it can be quantitative).*
- *Interviews.*
- *Questionnaires.*

Quantitative Research methods:

- *Natural phenomenon.*
- *Mathematical modeling.*
- *Experiments.*
- *Optimization.*
- *Game theory.*
- *Surveys.*
- *Bottom line statistics* ".

These methods stated above even made clear my observation as regards research done in Africa. Very interesting indeed that under Qualitative Research there is a mention of Social and Cultural phenomenon. The non-bearing in mind of this very important point is the reason why all imported so-called development projects to Africa have failed and continue to fail unless there is genocide on the whole Africa

and its population replaced which I even suspect a conspiracy theorem to do away with African, then Africa can be developed based on imported ideas.

I will fundament on this point. Africa is a continent very diverse in customs and traditions even though the nucleus of the customs and tradition is the same but there are variations due to the geography because when emigration took place, man had to adjust to the environment to conquer nature for survival, even though respect to nature is a way of conquering it also. Due to this factor, there are variations in the food they eat, the way they build their house, their economy changes and the activities of each in the family system vary from place to place. When colonialism hit Africa, conflicts of culture started even today it is worse. The colonial masters developed their homeland based on slave work, exploitation of resources in the colonies, they alter the sociology of the people introducing confusions and when it comes to building development projects for Africa they ignore the sociological and cultural difference and implemented project that did not stand the test of time. Today, Africa which is the only West Friendly Society in this planet is in absolute underdevelopment and the map of electrification shows Africa as a dark continent when almost half or more of the sources of energy used to drive the development in this blessed planet comes out of the soil of Africa. I postulated on my web site (www.oviri.com.ar/projects) some years ago that people's traditions and customs must be preserved and technology introduced to make work easier but the idiosyncrasy of the people must be preserved. The solution to the electricity problem of Africa will only be possible if we respect the sociology of the people and adapt technology to them instead of wanting to adapt the people to technology. I had a simple project on how to Electrify Delta State of Nigeria which I coded Delta Force that is easily adaptable but typical of Africa, a project must be foreign for it to be good. So a research must bear in mind Social and cultural phenomenon for it to be appropriate, if it does, after then that we can have case studies and all the rest recommended by the material we are now using for this study.

Chapter 2.

Survey Research Methods.

Methods must be chosen depending on theme that is being researched. So Research is very broad a topic and methods can also depend on culture and idiosyncrasy of the people in the environment.

I looked through the lecture of Lynda Burton Sc.D at about 2007 in Johns Hopkins Bloomberg School of Public Health. In this lecture Survey Research was focused on the choice of Instrument.

Bussinessdictionary.com describes Survey Research as *"A method of sociological investigation that uses question based or statistical surveys to collect information about how people think or act".*

So we set out some question and get the answers which may be multiple choices and then we analyze the answers to get a result.

The following are extracted from the work of Dr. Lynda Burton which fit into the definition of Survey Research by Business Dictionary: Dr. Burton wrote

"*A survey is a survey because*

- *Of its Scientific Methodology.*
- *Data is collected from an individual.*
- *Samples are usually from large population.*
- *It is conducted for the purpose of Description, Exploration and Explanation.*

The characteristics of a Good Survey Research are:

- *Quantitative.*
- *Self-monitoring.*
- *Contemporary.*
- *Replicable.*
- *Systematic.*
- *Impartial.*
- *Representative.*
- *Theory based.*

For the methodology to be Scientific, the survey types must be:

- *Cross sectional.*
- *Longitudinal.*
- *Trend.*
- *Time cohort.*
- *Panel.*

As regards sampling, there is issue such as:

- *Basic rule – all individuals must have equal chance of being selected.*
- *May be more accurate data than a census.*

- *If all members of a population were identical, sampling would not be necessary.*
- *Aim for sampling that is generalizable to total population of interest.*

Dr. Burton gave some simple definitions of elements to use:

- *Elements – Unit from which data are collected.*
- *Universe (A Modern Mathematical Term) – Aggregation of all elements.*
- *Survey Population – population from which you are drawing sample.*
- *Sampling frame – actual list or "hat" from which you select elements"*.

With these points above she narrowed the research spectrum; this narrowness surely will produce error whose magnitude depends on the relationship between the actual population and the survey population.

Dr. Burton also went more scientific by stating different sampling systems. She stated that:

"*Sampling Random generator:*

- *Random number generator.*
- *Draw number out of a "hat".*

Mathematically the mentioned sampling generator is correct. It allows mathematical analysis to influence the result of the research.

Systematic Sample:

- *Every element of list .*
- *Select every "kth" element.*
- *Make sure list isn't periodic*".

Though I agree with this sampling approach, care must be taken. When we talk about a society, all who carry out the research must not be strange to the society. When I was in the village in Africa, doors were usually opened, when a family walked to visit another family , their child is usually in front, when the child ran to the house they are visiting, if there was a child in the house , he/she remains there, but if there was no child to greet him/her , she goes back to her parents to say "there is no one there". This may be a laughing matter, but is it not because most foreign researchers on population when to get to Africa and they see no old people and the street they say that life expectancy in Africa is low. The fact is that old people in Africa do not go about in the street, the younger once visit them at home, for the old man or woman not to live a alone, grand children are sent to live with

them and it is the grandchildren that goes to the market to buy all the need, the grandchildren go to the river to fetch water. This is why Africa believes so much in reproduction so that their eve may not be hard as I see here in the Western World. So how do you sample such a society if you are strange to the system?

Dr. Burton said:

"*Stratified Sample:*

- *Same as for simple random sample.*
- *However, select from within specific pre-determined groupings.*
- *Insured heterogeneity,*

Multi-Stage sample:

- *Select cluster of elements first, for example, physicians.*
- *Then select elements, for example , patients.*

Non-Probability Sampling Approaches:

Purposive or judgmental

- *Educated guess of representative unit.*

Quota sampling:

- *Select any way you want following a pre-set quota pattern.*

Available subject sampling:

- *Use whoever is available".*

These non-probability sampling approaches is what have been done in Africa by all international organization. A continent where it is not compulsory to have ID Card, where no record of place of birth, where ethic identity is only verifiable among themselves, where census is never correct. Imagine I had a debate with a Nigerian Diplomat that there are many more women in Nigeria than men from what I observed in my last visit, the diplomat said never, men are more. This is because he believes that it is an insult to men to say there are more women than men. I told

him straight on his face that in any nation where women are much less in number than men, such a nation is cursed to self annihilation. A researcher gets to Africa and because of the fear of security books in to a five and four star hotel and then asks the workers in the Hotel about AIDS and they say “Oh my cousin died of aids” , the research is done after five tells the researcher. This some of us know very well and have raised alarms and no one will listen to us. How do you know what kills a people when there is not a reliable electricity supply for their few medical centers, where electro-medical Instruments built to operate with 220 volts AC are operated with 160 volts AC. So non-probability Sampling approach is the only alternative but its result does not convince me.

Chapter 3.

Experimental Research Method.

D. Moore and D. McCabe in their book wrote “*The best method—indeed the only fully compelling method—of establishing causation is to conduct a carefully designed experiment in which the effects of possible lurking variables are controlled. To experiment means to actively change x and to observe the response in y*”.

L.R. Gay in his Educational Research wrote “*The experimental method is the only method of research that can truly test hypotheses concerning cause-and-effect relationship. It represents the most valid approach to the solution of educational*

problems, both practical and theoretical, and to the advancement of education as a science".

A white paper on the pages of The University of Wisconsin said the purpose of an experiment is to demonstrate causation, that A→ B, that is B is caused by A. The paper went on to state that the requirement casuality are:

- Correlation.
- Order.
- Control over other variables.

It also stated that Extraneous variables and alternative explanations are Definition and Example.

Also it says that Experiments differ form other types of Researched it contains:

- Manipulated independent variable.
- Control of organismic variables either by Random assignment of units of analysis to conditions of the independent variable and Assignment of each units to all condition, with controls on order of presentation.
- Control of other variables by holding them constant. Extraneous variables can explain the finding of a study without resorting to the hypothesis and also lead to an alternative explanation of findings from the one you had.
- In an airtight experiment, there is only one rival hypothesis: chance.

The paper went on to state that the strength of experiments are Control and Ability to demonstrate artificiality and lack of external validity.

Steven M. Ross of the University of Memphis and Gary R. Morrison in their work "Experimental Research Method" present the topic very clearly and we shall go into it.

They wrote "The experimental method formally surfaced in educational psychology around the turn of the century, with classic studies by Thurndike and Woodworth on transfer (Cronbach, 1957). The experimenter's interest in the effect of environmental change, referred to as "treatments", demanded design using standardized procedures to hold all conditions constant except independent (experimental) variable. This standardization ensured high internal validity (experimental control) in comparing the experimental group to the control group on the dependent or "outcome" variable. Traditionally, experimenters have given less emphasis to external validity.

Ross and Morrison named types of experimental design as follows:

- True Experiment. The ideal design for maximizing internal validity is the true experiment. Here subjects are randomly assigned and treated after which observation is made of the results of the treatment.
- Repeated Measures. It is a variation of true experimental design but in this case all treatments are administered to all subjects.
- Quasi-Experimental Design. This is the use of pretesting or analysis prior of previous achievements to establish group equivalence.
- Time Series Design. This is a type of Quasi-Experimental approach. The family of designs involves repeated measurements of a group, with the experimental treatment induced between two measures.

The good thing about Experimental Research Method is that I have true information from the source of measurement. Although the quality of my measurements depend on the reliability of the Instruments used for the measurement. Yet it is probably the most trustworthy because it represent sampling, if they chose well the parameters of measurement, all data can be stored for detailed analysis. Numerical data can be plotted in graphs for analysis. Mathematical tool like Discrete Fourier Transform can allow better analysis as regards stability degree of the behavior of the subjects measures. Another advantage is that if we are not too satisfied because we see different in what we observe and what we measured, the process can be repeated many times and result correlated for better information. If we add parameters such as

time of day, seasons and years with natural events like tornados and hurricanes, dry and wet seasons, all these can be plotted for better analysis.

Chapter 4.

Constructive Research.

Dodig Crnkovich Gordana in his book of 2010 Constructive Research and Info-Computational Knowledge Generation gave a very good presentation of Constructive Research. I will make extraction from his work before making few lines of mine. According to him “The key idea of Constructive Research (or the Constructivist knowledge production), is the construction, based on existing knowledge used in novel ways, with possibly adding a few missing links. The construction proceeds through design thinking that makes projection into the future envisaged solution (theory artifact) and fills conceptual and other knowledge gaps by purposefully tailored blocks to support the whole construction”.

He then explained what he called Characteristics of Constructive Research by saying “Constructive Research Method implies building of an article (practical, theoretical or both) that solves a domain specific problem in order to create knowledge about how the problem can be solved (or understood, explained or modeled) in principle. Constructive Research gives result which can have both

practical and theoretical relevance. The research should solve several related knowledge problems, concerning feasibility, improvement and novelty".

Since he said based on existing knowledge and also pointed at solving problems and then charged that there must be results of practical and theoretical relevance, it means that there must be a design to achieve this goal, he then appealed to Design Research as Constructive Research thus "Design Research is often present as an important part of research within Engineering, Computer Science and Information Systems. It involves the analysis of the use and performance of designed artifacts (constructs) in order to understand, explain and improve designed systems. The outputs of Design Research are constructs, models, methods, theories, instantiations , algorithms, human-computer interfaces, system design methodologies, languages and others artifacts".

Dr. Gordana also compared Constructive Research with Action Research by writing : "Constructivistic Epistemology emphasizes the fact that scientific knowledge is constructed by scientists with the help of cognitive tools. It is the opposite of the positivist epistemology which see scientific knowledge as discovered in the world. For a classical positivist, scientific facts discovered and the connection between he world and the fact is unique. On the other hand constructivism entails that there is no single valid methodology for construction of scientific knowledge, so no unique prescription to establish the facts or provide the data, no guarantee for a consensus. One can say that constructivism is more interested in the mechanism of theory building while positivism describes the steady state of theory where one dominant framework has been established among competition approaches".

Let me break into two Constructive Research. Research is to investigate deeply and come out with clear result which may give way to new knowledge. We are looking for something, we must search everywhere, consult all sources of knowledge both conventional and non, if necessary both physical or not and may even exploit ancient philosophy.

Now let us see the word Constructive. I have heard many times and also have made use of the word constructive criticism in politics. This because we know that there are destructive criticism that will always see things negative about what others are doing. In this case constructive criticism help to bring changes that are positive. We can now see how Dr.Gordana related constructivism with positivism. Constructive leads us to what is positive. Constructive research collect theories,

hypothesis and case studies to later go deep into each in other to come out with positive results.

Chapter 5.

Reductionist Data Analysis.

In all kinds of researches that are written, it is very important that we choose every word well as regards the title. For this reason, I will take the word “Reductionist”.

Collins Dictionary defines Reductionist in three forms:

1. Someone who analyses complex things, data, etc, into less complex constituents.
2. (pejorative) Someone who holds that a complex data system, etc, can be completely understood in terms of its simplest parts or components.
3. (philosophy) Someone who holds that entities of a given kind are collections or combinations of entities of simpler or more basic kind or that expressions denoting such entities are definable in terms of expressions denoting the more basic entities.

After seeing Reductionist apart, we now go into Data Analysis briefly. Barbara B. Kawulich of State University if West Georgia presented very good write-up on Data Analysis Technique in Qualitative Research from which we shall extract explanation of Data Analysis.

Kawulich wrote “There are many different techniques for analyzing qualitative data. Novice Researchers may feel overwhelmed by the variety; however it may be helpful for them to understand that there is no prescribed way to address the process”.

What is Data Analysis?

According to the presentation of Kawulich , LeCompte and Schensul (1999) define analysis as the process a researcher uses to reduce data to a story and its interpretation. Data analysis is the process of reducing large amounts of collected data to make sense of them. Patton(1987) said three things occur during Data Analysis, data are organized, data are reduced through summarization and categorization, and patterns and themes in the data are identified and linked. LeCompte and Schensul (1999) suggest that data analysis be done as data are collected in the field, as soon as possible after data have been collected, both while the researcher is still in the field, and later, when the researcher is no longer n the field. They added that field analysis includes inscription, description and transcription, and that analysis be done Top Down and Down Top fashion.

Approach to Analysis.

To this Kawulich reffered to Merriam(1998) who discussed several approaches to data analysis by including Ethnographic Analysis, Narrative Analysis, Phenomenological Analysis, and Constant comparative methods. The discussion said Ethnographic Analysis involves identifying categories of related to culture's economy, demographics, human life, particularly family, education and health cae issues and the environment.

Kawulich also said that Bernard suggest several approaches to data analysis including hermeneutics or interpretive analysis, narrative and performance analysis, discussion analysis, grounded theory analysis, content analysis, and cross-cultural analysis.

We resume below what Merriam and Bernard said:

Merriam (1998) :

Approaches:

- Ethnographic Analysis.
- Narrative Analysis.
- Phenomenological Analysis.
- Constant Comparative Analysis.

Bernard (2000):

Approaches:

- Hermeneutic/Interpretative Analysis.
- Narrative/Performance Analysis.
- Discourse Analysis.

- Grounded Theory Analysis.
- Content Analysis.
- Cross-cultural Analysis.

The approaches mentioned above will produce best ever result in the studies of every aspect of mankind. This is because it bears in mind the Cultural values and folklores inside which history of many primordial tribes in the planet are hidden.

From the brief on Data Analysis, we can see that Reductionist Data Analysis is a very coherent proposal and research deep by working with components other than assumption.

I have told many Leaders of Africa that I met that all the complex problems facing the continent can be solved through simple solution to every piece. They will not listen. I said in many Diaspora professional forum that all the complex Social and Economic problems can be solved with simple approach and using the traditions and customs as base for micro-industries. The Africans refused. I told the Former Nigerian Foreign Minister that with the approach to solve the energy crisis in Nigeria, it will take five hundred years and wars that will reduce the population to ten percent of the current population before Nigeria can have stable electricity. The problem of food, water, infrastructure, health, education in Africa can be solved through simple approach to its complexity. I have research made to offer simple solution to the complex problems of Africa but created interest will not allow them through. So I consider myself a Reductionist.

Reductionist Data Analysis will decompose a Research into small components and collects data from each component for analysis. This method may not be applicable everywhere but there is one place where it is the best, Africa. Any Research done in Africa must include a Reductionist Approach and Data Analysis.

Why?

Africa is probably the oldest of human settlements with thousands of dialects and languages. The fact is that no two African villages separate more than one mile speak the same dialect. Everyone worship its own village Deity and every family worship their individual ancestors. Another complexity is that that had always been intervillage family formation whereby a woman leaves her own village to that of a man where she builds her home because in African tradition there is not marriage. This make even a family of two cultures keep values different from others in the same village. Though the village has its own standard , yet every family has its own code which is a combination of the values of the home of the paterfamilias and the home of the woman that came to establish the home and owns the home. In addition to this complexity is the imported religion. For example in Yorubaland

there are twin villages such that one is predominantly Christian and the other Muslim. All these factors must be borne in mind when studying a population in Africa. It is not out of place to say all surveys and research done in Africa are not farther away from fraud and inappropriate because mostly are conducted by people supervised by people strange to the environment and idiosyncrasy.

Reductionist Data Analysis will break research into components and collect data from each after which it will use tools available for Data Analysis to process all data collected. MY recommendation is that this methods is best for Africa.

Chapter 6.

Design Science.

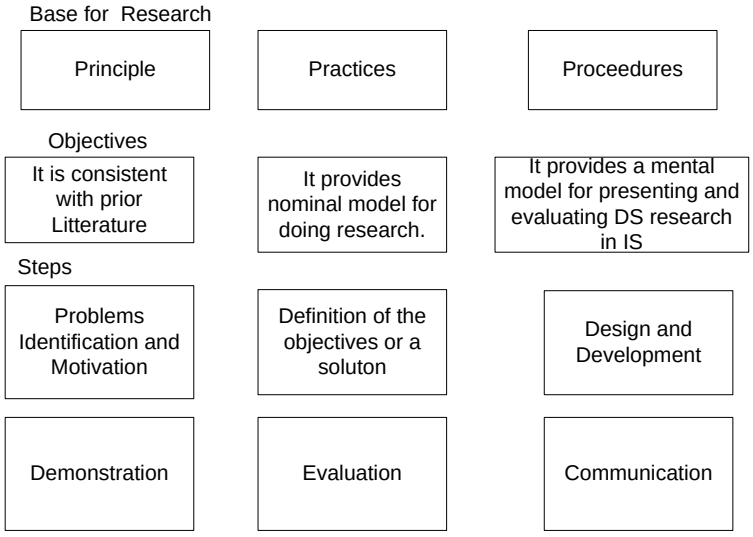
According to Van Aken in his works (2004) the main goal of Design Science Research is to develop knowledge that the professional of the discipline in question can use to design solutions for their fields problems.

He wrote:

“Since we are writing on the topic within Research Methods and also inclining unto Information Systems, we found very great contribution from the works of Ken Peffers, Tuure Tuunanem, Marcus A. Rothernberger and Samir Chatterjee in there work A Design Science Research Methodology for Information Systems Research published in the Journal of Management Information Systems Volume 24 Idue 3. Winter 2007-8 pp. 45-78. According group which I will call Peffers and Co, Design Science (DS) is of importance in a discipline oriented to the creation of successful artifacts, Several IS researchers have pioneered DS research in IS for many years yet little DS research have been done within the discipline. The lack of methodology to serve as a commonly acceptable framework for DS research and of template for its presentation may have contributed to its slow adoption”.

In this their work, Peffers and Co presented The Design Science Research Methodology (DSRM) that incorporates principles, practices and procedure required to carry out such research and meets three objectives: it is consistent with prior literature, it provides a nominal process model for doing DS research, and it provides a mental model for presenting and evaluating DS research in IS. The DS process includes six step: problem identification and motivation, definition of objectives for a solution, design and development, demonstration, evaluation and communication.

I want to put the last presentation in block diagram below:



In their presentation Peffers and Co. based their work on Design Information Systems. They first spoke about Problem Identification, then definition of the objectives of solution, design and development , demonstration of what was developed , evaluation and communication.

I agree totally with all the points they mentioned, but there is one point which is technically not relevant but without it there will be no commencement, it is duples, and I call it Political Will and Capital (Financing).

In the year 2000, when GPS satellites were already in the air but no receiving application was yet in the market, one Argentine small company, employed a group of programmers and they stored all the maps of the city of Buenos Aires into an Sql Data Base, then they developed asp that given the GPS position, the browser would show the map surrounding the position together with the driving direction. They were in a Trade Fair to show their product. When I passed through their stand, and introduced myself as Electronics Engineer, they got hold of me and gave me employment. They wanted me to design an electronics equipment that will receive GPS signals, decompose them and extract the position, then with the data of the position, the equipment connected to Nextel Modem Phone can read the data from their sever and plot the map on an LCD. The goal of the company was to send me to Israel to convert my electronic circuit into a chip for it to be marketed. They would call it Ubicat.

I did not know what GPS was, I had to research, I found out that there are GPS receivers in electronic shops but without application, You connect into the serial port and from hyperteminal could receive parquets of data. I got one of them, and researched through the documentation to understand the protocols. After while I

developed a software with Visual Studio C++ to receive and decode all GPS Data. Then I designed electronic equipment with an LCD used on helicopters, the equipment called Ubicat was connected to another serialport. At the end The software in the computer would extract the current coordinates from the GPS and and through an ActiveX Control that I designed would access the website where all the maps are and extract the map of the location, later another process would extract the map data data from the html code, the map would later be converted into text and transferred unto the Ubicat through the serial port. Ubicat would convert the text data to binary data and upload it into the LCD.

After the successful phase of the basic design, we ran into problem of demonstration, there were no Laptop with two serial ports. So I developed another software that could store all GPS coordinate into a Microsoft Access Data Base, we entered a car and drove round Buenos Aires collecting data from GPS Satellites, later in the laboratory, I designed another software that read the data stored and queried the map server and the maps were successfully displayed on Ubicat Screen.

Till here, everything was moving fine, the next step was to improve, I requested they employed some technicians to work with me, the capitalists refused; Argentines have sold the product already to Mexico and Chile when they did not have the product. The Capitalists would not put more money and the project folded up.

Even though Peffers and Co. had not done their research by the time I researched and designed into GPS, the method the explained is very realizable and correct.

I wish to visit the work presented Alan R. Hevner, Salvatorio T. March, Jinsoo Park, Sudha Ram and published MIS Quarterly Vol. 28 No, 1 , pp. 75-105 March 2004, This group mentioned two Paradigms. They wrote “Two paradigms characterize much of the research in the Information System discipline: Behavioral science and Design Science. The Behavioral Science paradigm seeks to develop and verify theories that explain or predict human organizational behavior. The Design Science paradigm seeks to extend the boundaries of human organizational capabilities by creating new and innovating artifacts. Both paradigms are foundational to the IS discipline, positioned as it is at the confluence of people, organizations, and technology…… In the Design Science paradigm, knowledge and understanding of a problem domain and its solution are achieved in the building and application of the design artifact”.

Do we just start designing an Information System without a purpose?

Is achieved”.

They went on giving ideas about behavioral science, they wrote “The behavioral science paradigm has its roots in Natural Science research methods, It seeks to develop theories (i.e. principle and laws) that explain or predict organizational and human phenomena surrounding the analysis design , implementation, management and use of information system. Such theories ultimately inform researchers and practitioners of the interactions among people , technology and organizations that must be managed if an information system is to achieve its stated purpose, namely improving the effectiveness and efficiency of an organization”.

By mentioning that behavioral science paradigm has roots in natural science, we can conclude that behavioral science and in fact science is as old as mankind and grew with mankind because from my experience in the jungle of Africa the behavior of plants gave them names and use. For example there is a plant my father planted in front of our home in a Yoruba village whose name is “Amoke” which mean “we mould the time”. The name arose from its behavior, when night is near and there is darkness, it folds its leaves and the leaves bow down and once day break with the first light , the leaves wake up and lift their heads and open up the beauty of its nature. The leaves of this plant are squeezed and its fluids used to cure Eczema and some skin diseases.

Henver and Co sited Simon (1996) who said “The design-science paradigm has its roots in Engineering and the Science of the artificial”. To them “It is fundamentally a problem solving paradigm”. I agree with them on this. They went on by writing “It (design science) seeks to create innovations that defines the ideas, practices, technical capabilities and products through which the analysis design, implementation, management, and use of information systems can be effectively and efficiently accomplished.”

Their paper proposed 7 guidelines for Design Science in Information Systems Research which are as follows:

Guideline 1: The design-science research must produce a viable artifact in the form of a construct, a model, a method, or an instantiation.

Guideline 2: The objective of the design-science research is to develop technology based solutions to important relevant business problems.

Guideline 3: The utility, quality and efficacy of a design artifact must be rigorously demonstrated via well executed evaluation methods. The evaluation methods are Observational, Analytical, Experimental, Testing and Descriptive.

Guideline 4: Effective desing-science research must provide clear and verifiable contribution in the areas of the design artifact, design foundations, and /or design methodologies.

Guideline 5: Design-Science research relies upon the application of rigorous methods in both the construction and evaluation of the design artifact,

Guideline 6: The search for an effective artifact requires utilizing available means to reach desired ends and while satisfying laws in problem environment.

Guideline 7: Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.

To conclude, I want to decode the topic title “Design Science Research”. Taking the first two words Design Science can also be written The Science of Design. When we use the word science we are already applying mathematics, so we are talking about the scientific way to design which must obey mathematics principles which in turn needs methods for its analysis. All documents consulted are pointing out that Design is an artifact because it is for a purpose. So Design Science

Research if thus is research into the development of an artifact based on applied mathematically analyzable methods. As an artifact means that it must have a purpose.

Chapter 7:

Action Research:

On March 9 2010, SagePub.com published the work of Koshy et al which was entitled What is Action Research?

In their introduction they stated that Action Research which is also known as Participatory Action Research is a community based study, cooperative enquiry , action science and action learning- an approach commonly used for improving conditions and practices in a range healthcare environment,

In this case they applied their studies to health sector and stated that it (Action Research) involves healthcare practitioners conducting systematic enquiries in order to help them improve their own practices, which in turn can enhance their working environment and the working environments of those who are part of it.

According to this paper, Meyer(2000) maintains that Action Research's strength lies in its focus on generating solutions to practical problems and its ability to empower practitioners by getting them engage with research and the subsequent development or implementation activities.

Koshy et al said that the Users of healthcare services can be often be included in an Action Research study, as such they are not researched upon as us the case in much traditional research. All the participating research will ideally have to be involved in the process of data collection, data analysis, planning and implementation action and validating evidence and critical reflection, before applying the findings to improve their own practice or the effectiveness of the system within which they work.

According to them "As we can understand Action Research is based on mobilizing those in the field to note and report, it does not need to consult theories. A typical example is a research to know if there are malaria cases. With just one discovered no matter after a length of time, the result is that malaria exists. If many reports are made, it helps the analysis of data obtained".

As regards the purpose of Action Research Koshy et al wrote that

“action research supports practitioner in seeking out ways in which they can provide and enhanced quality of healthcare. With this purpose in the mind there are feature of the action research that are worthy of consideration”.

The following are the features recommended by Koshy et al:

- Action Research is a method used for improving practice. It involves action, evaluation and critical reflexion and based on the evidence gathered-changes in practice are then implemented.
- Action Research is participative and collaborative, it is undertaken by individuals with a common purpose.
- It is situation.based and context specific.
- It develops refletion based on interpretation made by participants.
- Knowledge is created through action and at the point of application.
- Action Research can involve problem solving , if the solution to the problem leads to improvement of practice.
- In action research findings will emerge as action develops but these are not conclusive or absolute.

According to these researchers Koshy et al, “ the most known proponent of Action Research in the UK has been Lawrence Stenhouse , whose seminal (1975) work An Introduction to Curriculum Research and Development added to the appeal of action research for studying the theory and practice of teaching and the curriculum”.

What is involved in Action Research?

Koshy et al wrote “Research is about generation knowledge. Action Research creates knowledge based on enquiries conducted within specific and often practical context. Kemis and McTaggrt (2000: 595) called it participatory research and that it involves a spiral reflective cycle of:

- Planning Stage.
- Acting and observing the process and consequences of the change.
- Reflectiing on these processes and consequences and then replanning.
- Acting and Observing.
- Reflecting.”

As we continue to research into the works on researchers about Action Research, the centerpiece remain involvement of many practitioners in sampling the population for a purpose. This research is an artifact.

There are many still debating the real meaning of Action Research, there still appears to be a debate but all differences are slimmed down if the research is in a specific field. That is the definition of Active Research depends on the discipline to reduce the differences of opinion. We quote below some loose definition of Active Research which shows that the debate is still on and in fact the grammatical meaning of Action Research has been ignored altogether. Very typical of researchers.

We look into Open University UK. An Introduction to action research for Associate Lecturers within the OU context , in the section entitled “More detailed information for those who are interested in trying action research”.

In this document , they quoted Kemmis and McTaggart as distinguishing Action Research from Normal Practice of teaching in the following way:

- It is not usual thinking teachers do when they think about teaching. Action Research is more systematic and collaborative in collecting evidence on which to base their group reflection.
- It is not simply problem solving. Action Research involves problem-posing, not just problem solving. It does not start from a view of problems as pathologies. It is motivated by a quest to improve and understand the word by changing it and learning how to improve it from the effects of the charges made.
- It is not research done on other people. Action research by particular people on their own work, to help them improve what they do, including how they work with and for others.
- Action Research is not “the scientific method” applied to teaching. There is not just one view of “the scientific method”, there are many.

But the OU document stated that though Memmis and McTaggard tried to differentiate between action research and teaching, there is obvious a close connection between the two and it is this close connection that makes the approach a particular attractive one for practitioners. It quoted Zeni (1998, p.13) thus:

“Action Research involves practitioners in studying their own professional practice and framing their own questions. Their Research has the immediate goal to assess, develop or improve their practice. Such research activities belong in daily process of good teaching, to what has been called the ‘zone of accepted practice’.

The OU document in its Section 3 the following:

As regards history and scope of Active Research, they wrote “As Cohen, Manion and Morison (2000) point out in the introduction to their chapter on action research said One of the founding figures of Action Research, Kurt Lewin (1952), remarked that research which produced nothing but books was inadequate. The task, as Marx suggests in his Theses on Feuerbach, is not merely to understand and interpret the world, but to change it”.

The document went on to say there was an Action Research Movement and quoted Bogdan and Biklen (1982) note, to be aimed at ‘…the systematic collection of information that is designed to bring about local change’.

If it is designed, then there is a purpose.

The document mentioned Paolo Freire who later developed a form of inquiry called “participatory” research provided example of this sort of work by noting that a researcher “acts as a facilitator of a process of inquiry involving many stakeholders in the situation as wish to be involved. Ideally, these stakeholders will be involved in the research design, data gathering, data analysis, and implementation of action steps resulting from the research. (Benz and Shapiro 1998 p.128)”

On thing clear till now is that Action Research is group based and must be well planned and coordinated.

Chapter 8.

Ethnographic Research.

Ethnographic Research is a research into the study of cultures. It is a very interesting discipline that could lead us to the common origin of mankind. Many of the ethnic crisis going on in Africa today could be resolved if Africans will sit down and study their origin. I show for example in my debates in Diaspora that after travelling by road from Nigeria to Liberia and also Tchad and Cameroons, the whole population of West Africa from The Cameroons to Morocco are the same people while Mauritania is a melting pot of Northern African expansion and those through Morocco.

Pavel Zemliansky (2008) gave us his definition of Ethnography and Culture "Ethnography is the study of cultures through close observation, reading and interpretation".

He further explained that "Ethnographic Researchers work in the field, in cultures which they are studying. The activities they conduct are also often called fieldwork. Ethnographic researchers learn how to recognize traits that make up a culture and how to describe it to others. As a research method, ethnography is used in many disciplines, among them anthropology, political and social studies, education, and others. Because ethnography is the study of cultures, before going any further, it is important to define the word Culture".

Zemliansky also gave an alternative approach to defining Culture by quoting from the 1985 work of Anthropologist Clyde Kluchohn who defined Culture as "

1. The total way of life of a people.
2. The social legacy the individual acquires from his group.
3. A way of thinking, feeling, and believing.
4. An abstraction from behavior.
5. A theory on the part of anthropologist about the way in which a group of people in fact behave.
6. A storehouse of pooled learning.
7. Learned behavior.
8. A set of technique for adjusting both to the external environment and other men.

9. A behavioral map, slave, or matrix".

Zemliansky also quoted a Prominent and Ethnographer Clifford Geertz (1973) who wrote that "man is an animal suspended in webs of significance he himself spun… I take culture to be those webs, and the analysis of it to be therefore not an experiment of science in search of law but an interpretative one is search of meaning. It is explication I am after".

Surely Clifford Geertz description does not appear to me to be absolutely academic, I believe that there is a spiritual (based on religious education) influences in this his definition. To say man is animal suspended on web which could mean culture is to try to use physical evidence to explain what is not tangible.

Zemliansky said ethnographers define culture in broader terms, as patterned behavior or way of life of a group of people. Some of the elements of culture then are common habits, customs, traditions, histories, and geographies—everything that connect the members of the culture together and defines them.

I remember in the village in the middle sixties, in the kitchen we placed three stones in a triangular apex form, and we poke tiny firewood in between them and started fire for cooking. We had a clay pot filled of stew on it, when the stew boiled and cooking done, my mother asked me to remove the pot that contained the boiling stew from the fire to the ground. So I picked up the rag from a used cloth of my mother to lift the pot and remove it from the fire, my mother stopped me and said I could not use her used cloth to lift the food from which my father would eat, then I picked up a used cloth of my sister's used cloth and she authorized it. I

asked her why I should use my sister's used cloth and not hers, when said that my sister is my father's daughter, there was no problem, but she (my mother is a wife) and her used cloth could not be used because she is a wife. My mother got that from her mother. Someone form the Western World can never understand what I have explained. This is because the road travelled from the ancient of times differ in both cultures. In Africa , when a woman goes in with a man, it is not a legislative relationship, it is strictly spiritual. It is spiritual because it is a road to procreate and bring life, thus the home which belongs to the woman but built in a man's territory is a Temple with her as high priestess and the bed they sleep on is a sanctuary, fountain of life. The woman as a priestess thus has different rules to keep that home a sacred place for her and her children. What my mother did was homage to her ancestors to keep the home for her. This can never be understood by cultures outside Africa. Not everything a woman does to exalt her man is really destined to her man; many are destined to our ancestors in the higher plain for her to have peace of mind and emotional stability.

Zemliansky may have justified what I wrote above when he quoted Raymond Williams (1958) who said:

"Culture is Ordinary: that is the first fact. Every human society has its own shape, to its own purpose, its own meaning. Every human society expresses these , in institutions, and in arts of learning. The making of a society is the finding of common meanings and directions, and its growth is an active debate and amendment under pressures of experiences, contact and discovery, writing them into the land. The growing society is there, yet it is also made and remade in every

individual mind. The making of the mind is , first , the slow learning of shapes, purposes, and meanings, so that work, observation and communications are possible. Then, the second, but equal in importance is the testing of these in experience."

Raymond Williams said "There are ordinary process of human societies and human minds , and we see through them the nature of a culture: that it is always both traditional and creative: that it is both the most ordinary common meanings and the finest individual meanings. We use the word culture in these two senses: to mean a whole way of life—the common meanings; to mean the arts and learning—the special processes of discovery and the creative effort".

Williams gave a very elucidative meaning to culture by saying "the ordinary processes of human societies taken and studied , and explained in their totality give us an understanding of a given culture".

Ethnographic Research is Qualitative:

Zemliansky affirms that Ethnographic Research is Qualitative. I full agree. One of the dilemma facing the world today is the Eurocentric based history of mankind. I have felt it personally when discussing Africa with Eurocentric educated people. Our walk from the last three thousand years differ and any Ethnographic Research that does not come from within the culture under study is itself destructive because we shall always see everything negative instead of our common ancestry.

Zemliansky wrote: "Quantitative Research seeks to obtain data which are applicable to large populations, and a broad spectrum of project and situation. It

also often seeks to obtain results that can be repeated in other situations… Quantitative Research seeks to create data which can be used to explain and interpret large scale phenomena and patterns and which does that through numbers or some other quantitative means".

Zemliansky later explained what he meant by Qualitative Research by saying : "By contrast to Quantitative Research, Qualitative Research is interested in conducting in-depth studies of smaller populations and groups. They do not seek to obtain data that can be applied across the board, instead trying to find out as much as possible about a smaller sample or smaller phenomenon. Qualitative Research does not use statistics. Instead, they observe, conduct interviews and surveys….. Ethnographic Research is qualitative. Ethnographers do not apply the result for their studies of one particular culture to other cultures. They do not apply statistical methods of qualification to the results of their research, they are more interested in description that in statistics".

It will be good if UNESCO insist is education for all mankind and urge every culture to research into its ethnography with a guide by UNESCO, then we can have a very huge collection of studies about culture within its own folklore and how the environment has contributed to the development of every tradition. In the Western World, it is normal for a woman to slap her husband while in Africa it is a sacrilege. In the Western World, a woman can slap her man in public but in Africa it is a humiliation. In the Western World when a married woman sleeps with another man, it leads to divorce whole in Africa (outsides Islamic influence) it is taken that the woman was a victim of conquest instead of divorce, the offending man is charged

to court for desecrating the home of another man and thus is heavily fined and his family could face popular humiliation. We can now see the differences in cultures.

Ethnographic Research Methods:

Zemliansky proposed some methods for Ethnographic Research:

Observing: According to him “Indeed observing the culture is an excellent methods of studying it. Observation is one of the main Research Methods available to ethnographers. The way in which you plan and conduct your ethnographic observation is determined by your overall goals as an ethnographer, which is not only to notice interesting features of the culture you are studying, but also to discern patterns among those events and to explain those patterns and their significance to your readers.”

Interviewing:

The members of a culture under research need to be interviewed. He quoted The Author Ben Rafoth(2001) wrote “ The first step in getting someone to tell you something you are interested in hearing is to tell them exactly why you want to interview them. When you explain a clear purpose, the purpose you are interviewing understands what they need to talk about to satisfy you…”.

For the interview, there will be need to design the right questions.

Collecting and Reading Cultural Artifacts:

Zemliansky said that “another research techique designed to help ethnographic study is the collection of artifacts (objects) that might help understand that culture

and explain it to the readers. In deciding which artifact and to collect and what to do with them, emigrated to you should first of all, be guided by the idea that artifacts are texts that you can and should be read together with other research data".

In Nigeria, there is a kingdom called Benin Kingdom whose Capital City is Benin City. The Benin Kingdom is a birthplace of many princes that emigrated to create to other Kingdoms and Civilizations. In the Palace of the Oba (King) of Benin, there is a sector where events in history were recorded through images in bronze works and priests lectured from generation to generation to read them. That is how the Benin recorded their history in artwork. When the British bombarded Benin City, there are recorded arts showing soldiers lying on the ground outside the City and firing shells on the city. In 1956 when Queen Elizabeth visited Benin, at the moment She shook hands with Oba Akenzua, priests observed it and recorded what they saw in bronze work.

Arts contain information about a people and information about their history. There is an art of communication with nature which could also be classified as Philosophy of life by those who are experts in it. Poems and paintings are part of arts and if we agree that art has information about the history of people, and then we must move away from Eurocentric definitions and more to ethnographic definitions to be able to understand other people's history. In Nigeria, there is an art also can be classified as philosophy of life inherited from our ancestors which has been very good for us to decode our past in the ancient of times for us to know why we do what we do, it has participated in shaping the customs and tradition of the people.

The Urhobo Nation call it “Epha”, the Igbo call it “Afa” and the Yoruba call it “Ifa”. This art of researching through the past and future is still missing on the table of scientists but UNESCO has declared it heritage of mankind. I am academically more versed and I researched into what the Yoruba Ifa is about. Ifa has two parts, one is the art of throwing dice in such a was that an expert (trained for more that 10 years) can read it an the other is the collections of over a thousand poems pointing the essence of existence and even the roots of their civilization. One of the poems pointed that Death is a man with mother and wife, a perusal of the poem made we see that there is a hiding code for longer life. Ancient Africans lived long. In those Ifa poems there are hiding codes to identify herbs to heal different diseases and illness. Some contain the history of ancient kingdoms and even Genesis that almost coincide with the Biblical Genesis. Ifa controlled the life of Yoruba. The was nothing a Yoruba would do without consulting Ifa, even the forming of a family, the choice of a King, the day a woman goes to the house of the man. How then do you research into the Ethnography of the Yoruba without basic knowledge of what Ifa is?

This is why I agree with Zemliansky that collection and Reading of cultural artifacts are very valid method of Ethnographic Research.

Conducting Secondary Research:

Zemliansky also recommended conductiong secondary Research through the following points:”

- Any theoretical, historical or cultural studies to the subject of your investigation.
- Any studies of the cultural artifacts that you have collected as part of your project.
- Other ethnographic accounts of culture you are studying.
- Texts produced by the cultures you are studying. Sources of this type will particularly help you understand the discourse of the culture you are studying.
- These sources can be of many types: books, journal and magazine articles, websites and so on".

To end this very interesting topic, I consulted the masterpiece of Tony L. Whitehead Ph.D, Professor of Anthropology and Director , The Cultural Systems Analysis Group of the University of Maryland. On July 15 2005 , he presented a paper about Cultural Ecology of Health and Change entitles Ethnographically Informed Community and Cultural Assessment Research System (EICCARS) Working Paper Series. There is a chapter entitled Basic Classical Ethnographic Research Methods in which he wrote about Secondary Data Analysis and said "Secondary Data is simply a reffence to existing data, as compared to new data that are being collected or have been recently collected. Ethnograpghy, similar to any other type of research usually begins with the researcher availing himself of the range of information that already exists on the topic or people being studied".

In another EICCARS Working Paper entitled “Introduction to Community and Cultural Research Systems” , Professor Whitehead listed the sources of secondary data sources on the population or setting being studied as follows:

- Scholarly and popular (including media) publications.
- Archival and statistical data found in various administrative sources at the national. State and local levels (national censuses, govnerment agencies, state and local planning **offices**, police stations , city and town hall ledgers , budgets , sales records).
- Other Archival documents, such as maps, atlases, abstracts of titles and title deeds.
- Records and data collected by business, educational , health, social services , labor and professional associations, church records, and together entities that collect data for their particular missions.
- Data collected in various types of directories, including telephones, local business directories, and special ethnic publications.
- Personal and individual data, such as diaries , farmiliy histories , biographies and autobiographies, tombstones , etc.

Professor Whitehead also wrote about Field as essential attribute to Ethnography. He wrote “I argue , ethnography tends to share with other qualitative researchers the idea of ontological view of what they are studying varying based on environment factors, and their findings as an intersubjective product of the researcher and the research. The ontological and empsitemological orientations of ethnography provide the foundation for the carious attributes of ethnography itself.

The other attributes that I consider associated with ethnography, include the following:

- Ethnography is a holistic approach to the study of cusltural systems.
- Ethnography is the study of the socio-cultural contexts, process, and meanings within cultural system.
- Ethnography is the study of cultural systems from both ethnic and etic perspective.
- Ethnography is a process of discovery, making differences, and continuing inquiries in an attempt to achieve emic validity.
- Ethnography is an interactive process of learning episodes.
- Ethnography is an open-ended emergent learning process, and not rigid investigator controlled experiment. *(most so-called research done in Africa are investigator controlled specially funded by medical laboratories to market their drugs with conspiration of African so-called scientist based in those laboratories. I am now confronting them in Diaspora forum).*
- Ethnography is a highly flexible and creative process.
- Ethnography is an interpretive, reflexive and contructivist process.
- Ethnography requires the daily and continous recording of fieldnotes.
- Ethnography presents the world of its host population in human contexts of thickly described case studies".

Note: the comments painted yellow are mine and not Prof Whiteheads.

All materials consulted including books, publications , notes are all resumed into the presentation made in this essay about ethnography.

I categorically affirm that any ethnography made on a population by someone strange to it as fraud. If we want to study an ethnic population, we must extract members of the population and educate them, after which we send then back to their community to translate into Universal Languages their own ethnography. But we must first educate them that no culture is superior or inferior to another and that all culture are heritage of mankind and should do their work with pride. I am very sad about Africa, most Africans educated in Africa and Europe end up with inferiority complex and when they are sent to research on Africa, they end up copying what non-Africans wrote, on the long run, in a globalized world , the ignorance of African contributions to civilization, science and technology thickens. Professor Whitehead made the best definition of the property that ethnography must contain “Ethnography is an open-ended emergent learning process, and not rigid investigator controlled experiment”. This is where I fault all the researches don on Africa.

Another way of studying the ethnography of a people by outsider is to do like Mary Slessor who lived with the Calabar for very many years studying their culture and learning to speak their language to perfection before she produced a change in that culture.

Chapter 9.

Case Study Research:

Case Study Research is a research based on a special case for study. Pamela Baster and Susan Jack of McMaster University Ontario Canada in their publication "Qualitative Case Study Methodology:Study Design and Implementation for Novice Researchers" focused Case Study as follows:

"Qualitative Case Study methodology provides tolls or Researh to study complex phenomenon within their contexts. When the approach is applied correctly, it becomes a valuable method for health science research to develop theory, evaluate programs, and develop interventions."

According to Baxter and Jack, it must be known when to use a Case Study Approach. They quote Yin(2003) who wrote " a case study design should be considered when (a) the focus of th study is to answer 'how' and 'why' questions: (b) you cannot manipulate the behavior of those involved in the study: (c) you want to cover contextual conditions because you believe they are relevant to phenomenon under study: or (d) the boundaries are not clear between the phenomenon and context".

There are different types of case study. Baxter and Jack also listed difinitions of different types of case study which we have as follows:

1. Explanatory: This type of case study would be used if you were eeking to answer a question that sought to explain the presumed casual links in real-life interventions that sre too complex for survey or experimental strategies.

2. Exploratory: This type of study is used to explore those solutions in which the intervention being evaluated has no clear , single set of outcomes.
3. Descriptive: This type of case study is used to describe an intervention or phenomenon and the real-life context in which it occurred.
4. Multiple-case studied: A multiple case study enables the researcher to explore differences within and between cases. The goal is to replicate findings across cases.
5. Intrinsic: From Satke(1995) , the term intrinsic was used and suggests that researchers who have geniue interest in the case should use this approach when the internet is to better understand the case.
6. Instrumental: It is used to accomplish something other than understanding a particular situation.
7. Collective: Collective case studies are similar in nature and description to multiple case studies(Yin 2003):

Very clear approach to have a qualitative case study and according to Baxter Na Jack “Case study research is more than simply conducting research on a single individual or situation. This approach has the potential to deal with simple though complex situations. It enables the researcher to answer ‘how’ and ‘why’ type questions, why taking into considerations how phenomenon is influenced by the context within which it is situated”.

Chapter 10.

Conclusion:

One clear conclusion is that a research must be very objective and result must be trustworthy. Many researches are done for commercial purpose leading to all forms of materialisms and decay in human moral code. More immoral it is when conclusions are fabricated to please those who finance research. Mankind has existed tor thousands of years with the only obstacle which is war. Today the war on mankind is the fabrication of diseases to create markets for some powerful who finance wrongly processed research to suit their greed. As we are moving on now, the cure for cancer and AIDS is still generations away because of lack of sincerity to finance the research.

References:

Barbara B. Kawulich (2004) Data Analysis Technique Retrieved from: http://www.eeraonline.org/journal/files/2004/JRE_2004_08_Kawulich.pdf

Business Dictionary http://www.businessdictionary.com/definition/survey-research.html

Burton Lynda (2007) John Hopkins University Survey Research – Choice of Instruments Retrieved from: http://ocw.jhsph.edu/courses/hsre/pdfs/hsre_lect11_burton.pdf

Creswell, John W. (10/03/2011 Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th Edition)[Hardcover]

Moore. D, and McCabe, D. (1993) Introduction to the practice of statistics. New York. Freeman

Gay L.R. (1992) Educational Research (4th Ed.) New York, Merrill. Page 298.

Hevner , Alan R., March Salvatore T.,Park Jinsoo, Ram Sudha (2004) Design Science in Information Systems Research. Retrieved from:

http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.110.8133&rep=rep1&type=pdf

-Gay L.R. (1992) Educational Research (4th Ed.) New York, Merrill. Page 298.

Gordana Dodig Crnkovic (2010) Constructive Research and Info-computational Knowledge Generation.

Ken Peffers, Tuure Tuunanen, Marcus A. Rothenberger, Samir Chatterjee (2007) A Design Science Research

Koshy_et_all (2010) What is Action Research? Retrieved from:

http://www.sagepub.com/upm-data/36584_01_Koshy_et_al_Ch_01.pdf

LaVelle John (Feb 2010) Describing Evaluation retrieved from http://aea365.org/blog/john-lavelle-on-describing-evaluation/

Methodology for Information Systems Research. Retrieved from:

http://www.unhas.ac.id/rhiza/arsip/kuliah/Metode_Penelitian/REFERENCES/Design%20Science%20Research%20Methodology%202008.pdf

M.I.T Open Course 16.422 Human Supervisory Council (2004) Research Method and Experimental Research retrieved from **http**://ocw.mit.edu/courses/aeronautics-and-astronautics/16-422-human-supervisory-control-of-automated-systems-spring-2004/lecture-notes/040604coop_decis.pdf

Moore. D, and McCabe, D. (1993) Introduction to the practice of statistics. New York. Freeman.

Open University UK. An Introduction to action research for Associate Lecturers within the OU context. Retrieved from:

http://www.open.ac.uk/cobe/docs/AR-Guide-final.pdf

Prof. Dr. Md. Ghulam Murtaza (2012) Research :Intorductory Retrieved from https://www.google.com.ar/url?sa=t&rct=j&q=%E2%80%9CA+process+of+steps+used+to+collect+and+analyze+information+to+increase+the+understanding+of+a+topic+or+issue+creswell&esrc=s&source=web&cd=2&ved=0CC4QFjAB&url=http%3A%2F%2Fwww.kuurp.ac.bd%2FResearch_Introductory.ppt&ei=wgRtU8WPAvLgsASCsICIBA&usg=AFQjCNEYm4Vn9kJPCfMpczR58u2zOb2fRw&sig2=MbHHa5weK0w8H2tQo2nNfQ&cad=rjt

Shuttleworth Martyn ". Retrieved from: http://explorable.com/definition-of-research .

Steven M. Ross and Gary Morison (2001) Experimental Research Methods Retrieved from:http://architecture6.com/EXPERIMENTAL-RESEARCH-METHODS-download-w2246.html

Van Aken (2004) Design Science Chapter 5 Retrieved from: http://desrist.org/desrist/content/Jarvinen/ETODIT045.pdf

http://www.indiana.edu/~educy520/handouts/experiment_notes.pdf

Zemliansky Paul (April 10 2008) Methods of Discovery: A guide to Research Writing. Retrieved from: http://methodsofdiscovery.net/?q=node/1