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RESEARCH

DR OLAYINKA OBANEWA.
SENIOR RESEARCH FELLOW
West African Institute of Public Health



WEST AFRICA INSTITUTE OF PUBLIC HEALTH

MENTORING SERIES

Research

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Background

Located in Nigeria with representative missions across the 15 Economic Community of West African States (ECOWAS) , the West African Institute of Public Health (WAIPH) , through its flagship department , the Academy of Public Health (also known as West African Academy of Public Health), has promoted public health research, enabling environment, professionalism, certifications and standards as a non-state regional health development organisation in line with its adopted Regional Charter of Public Health. It thus posits that among its core functions, the “capacity” to deliver serves as the clasp for other ‘enabler’ functions like governance, advocacy and information. Without a sound capacity base, health systems will remain fragile and unable to deliver. So the evolution of a primordial approach to grow capacity becomes even more important, especially around the young workforce growth.

As part of its unrelenting efforts in professionalising and training public health professionals and ensuring that capacity development is strengthened in the countries of the ECOWAS region in line with the health workforce vision of the West African Health Organisation (WAHO), the Academy from 2015 has a standing policy to mainstream young professionals in early phase of their public health careers into activities and ensure that they have access to communities of practices (COPs) and the relevant platforms for mentoring. For this reason, the Institute through its Academy has been engaged in diverse youth/young practitioners -oriented capacity development programmes, within the broad vision of Supporting Young Professionals in Public Health to Thrive, through the use of the “Four Cs” approach of connect, contribute, collaborate and change. Currently in its fifth year, over 350 youths across the West Africa region (including Diasporic participants) between the ages of 20 years – 30 years have benefited immensely from the programme through the training, network building and the attendant personalized mentoring.

WAIPH thrives on evidence from rigorous analysis, thus the goal to mainstream research, especially African contextual studies, in all aspects of programming. www.publichealth-edu.org

Mentoring

Mentoring is the unique collaboration between two people based on the same aims, goals and expectations, focus, and mutual trust, regards and respect¹. Mentors advises, guides, counsels and supports a junior's (mentee) pursuit in any or all of the following: research, professional, life and work-life balance goals¹. The mentee is the individual who is being guided, counselled, supported, guided and trained by a senior (mentor)

Successful mentoring requires commitment to this process by both mentors and mentees and it serves as an important career advancement mechanism for both². Effective mentorship is an essential element to supplement a research faculty's personal and professional development by providing guidance through the mentor's expertise, sponsorship, and institutional knowledge. Thereby, the mentee develops professional competency in career planning, communication skills, research and scholarship skills, managerial and leadership skills, negotiating and networking skills, and navigating the institutional culture³.

Responsibilities of Mentees

- Willing and prepared to learn
- Committed and dedicated
- Indulge in self study
- Innovate and be creative
- Take risk
- Teach the mentor some new skills

Benefits for Mentees

- Exposure to novel ideas and thought process
- Develop ways to increase strengths and overcome weaknesses
- Build on the experiences of others
- Guidance on professional development and advancement
- The opportunity to develop new skills and knowledge

Research in Public Health

Public Health Research investigates and explores the association between of the multifaceted determinants of health such as social, demographic, biological and environmental characteristics and the health of the population. Simply, it is to analyse and

¹ Mentoring Program. Guidance and Program Plan. *U.S. Department of Energy. Office of Learning and Workforce Development*. 2014

² Frei et al. Mentoring programs for medical students - a review of the PubMed literature 2000 – 2008. *BMC Med Educ*. (2010)

³ Spence et al. Independent investigator incubator (I3): a comprehensive mentorship program to jumpstart productive research careers for junior faculty. *BMC Medical Education* (2018)

understand the health and diseases at the population level. The knowledge generated is applied to improve health and reduce health disparities.

Types of Research

Qualitative – Information/data generated are not in numbers. Data are obtained from diary keeping, interviews, documents, focus groups, case study, ground, and ethnography

Quantitative - This involves numbers, which are organised into orders, categories or measurable units. The data is obtained from experiments, surveys and controlled interviews with closed ended questions.

Mixed – Both qualitative and quantitative study are used. Usually, findings from one research is confirmed with results obtained from the other.

These researches can be primary or secondary. In Primary research, new data is collected, while further use of previously collected data is called secondary research.

In addition, a retrospective research looks backwards, prospective watches for the outcomes over a period of time and the cross sectional is a snapshot at a specific point in time, which is usually short.

Research designs

This is the aggregate of methods and processes used to carry out the collection and analyses of data for a research. There are several categorisation of the research design methods. Below is one of the most acceptable groupings of research designs.

- Descriptive (e.g., case-study, naturalistic observation, survey)
- Correlational (e.g., case-control study, observational study)
- Experimental (e.g., field experiment, controlled experiment, quasi-experiment)
- Review (literature review, systematic review)
- Meta-analytic (meta-analysis)

The words of Dr Ward Cates, MD, MPH, “ we should cast our nets more broadly into the social and program sciences arenas, to help assess effectiveness rather than efficacy and to ensure that society gets the best value for its health investments...” ask consequential questions like “so what?” and “how much?”⁴

⁴ Cates W. Invited commentary: consequential(ist) epidemiology: let's seize the day. Am J Epidemiol. 2013

Qualitative Research

Qualitative study enables researchers to explore human, social and behavioural issues related to public health that are not achievable with quantitative methods⁵. Several complex public health issues can be better understood by exploration using qualitative methodologies. However, these methodologies are underutilized in public health research particularly in developing countries.

Cardinal components

Introduction and literature review- This establishes the importance of the topic and provides background information needed to understand the research.

Theoretical Framework- The theory is how the researcher objectively views the issues. Examples of theoretical approaches are Phenomenology, Discourse Analysis, Grounded Theory and Ethnography.

Sampling- It is usually purposeful, as the relevant groups of people who either possess characteristics or live in circumstances that relate to the social phenomenon being studied are selected.

Sample size- Unlike quantitative study, there is no formula or criteria to calculate the sample size in qualitative designs. Experience and saturation are the key guiding factors.

Participation- Here ethical issues are very important, as no negative or bad effect must befall the participants/community due to the study.

Collection of Data- The most common are Focus Group Discussion (FGD) and Interviews (semi-structured or in-depth). In a focus group, issues are explored more rigorously with robust discussions between participants. FGD and interviews are expected to be recorded with an audio device.

Data Analysis- The first step is to transcribed the recordings as accurately as humanly possible. After reading and several re-reading of the transcripts, the theoretical framework, study aims and research questions would determine the coding, categorisation, theme formation, summary and presentation.

Feedback to participants- The participants and their communities are the most important beneficiaries of the study and not the journals, blogs and other academic platforms. It is unethical to deprive the community the research findings.

Presentation and Dissemination of Research findings- Platforms such as blogs, journals and books can be used for dissemination of result findings, but it is important that the issues are properly identified and appropriate solutions proffered.

⁵ Isaacs AN. An overview of qualitative research methodology for public health researchers. Int J Med Public Health 2014

Quantitative Research

Involves the collection and analysis of numeric (simple or organised) data, and to detect patterns, trends, distribution, percentages, proportions and averages, determine associations between variables, make predictions, test hypothesis, test causal relationships, and compare or generalise results across sub- or wider population.

Basic Quantitative Research

Descriptive – used to show simple summaries of data in numbers and simple graphs.

Correlation – explores the degree of association between study variables.

Experimental/Interventional – is to test the efficacy of specific treatments or preventive measures by exploring the existence of a cause/dose- effect relationship.

Quantitative Research Design - The comprehensive approach that integrates the different segments of the study in a methodical and logical way⁶. Examples include

Case reports/series – A case report is a detailed account of the diagnosis, treatment, response to treatment, and follow-up after treatment of a single patient/individual. The case series is a collection of case reports involving patients/individuals with similar treatment/exposure/characteristics.

Cross sectional – The snapshot of the presence or absence of disease or other health-related events in a population at a specific period.

Case Control – A retrospective comparison of the history of exposure of a disease or health event in cases (those with event/disease of interest) and controls (those without it)

Cohort – a group of individuals exposed to a putative risk factor and a group who are unexposed to the risk factor are followed over time (often years) to determine the occurrence of disease

Interventional trials – the most recognised is the randomised clinical trials, where individuals are randomised into control and intervention groups and followed prospectively to compare the outcome of intervention (new treatment, no treatment).

Systematic review – It examines all published and unpublished literature on a subject matter, and combines the findings, quantitative or qualitative on the research question.

Meta-analysis – The combination of quantitative results of different studies on a specific question

Important terms in Quantitative Research

Bias – Systematic error that causes wrong result estimates

Confounder – A variable that is not being studied, which may be influencing the result

Chance – simply random error

Reliability – The consistency of the method in measuring what it should measure

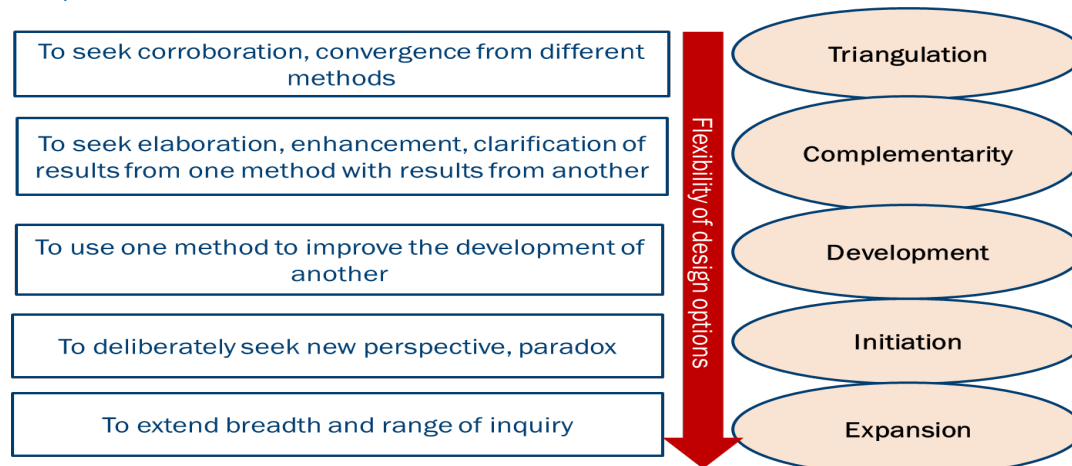
Validity – The accuracy of the method to measure what it should measure.

⁶ Public Health Action Support Team (PHAST). Health Knowledge 2020. <https://www.healthknowledge.org.uk/e-learning/epidemiology/practitioners/introduction-study-design>

Mixed Research

“Mixed methods research is a methodology for conducting research that involves collecting, analysing, and integrating (or mixing) quantitative and qualitative research (and data) in a single study or a longitudinal program of inquiry. The purpose of this form of research is that both qualitative and quantitative research, in combination, provide a better understanding of a research problem or issue than either research approach alone.”⁷

Why the Mixed Method Research is used⁸



Types of Mixed method Research

The major acceptable ones are in the table below⁸

S/N	Type	Explanation
1	Explanatory sequential	After Quantitative data collection and analysis, the next is the Qualitative data collection and analysis and finally, the interpretation
2	Exploratory sequential	First, the Qualitative data collection and analysis, the next is the Quantitative data collection and analysis, and finally, the interpretation
3	Convergent parallel	The Qualitative data collection and analysis and Quantitative data collection and analysis are carried out simultaneously, thereafter, the data is Integrated and re-analyse and finally, the interpretation.

⁷ Cresswell, J & Plano-Clark, VL. . Designing and Conducting Mixed Methods Research (2nd Ed.) Sage. 2011

⁸ Burt Jenni. Mixed Method approaches: the promises and the pitfalls. 7th ESRC Research Method Festival 2015

Writing Style

Plain language writing – This make sure that the audience comprehends the write up. The language used is simple, easily and fully understandable, and devoid of jargons, slangs or complicated language.

Academic writing – the tone, style and presentation are formal, which is clear, concise, systematic, structured and backed up by evidence from relevant studies (referenced).

Tips to academic writing

- Avoid jargons, verbose and complicated language
- Do not use contractions
- Action voices should be used
- It is best not to use first person
- Avoid the use of prepositions to end sentences
- Read and reread the work
- Proof read diligently
- Use an acceptable reference style

Reference style

Reference and citation **style** are usually used to refer to the same process. It is the organised way that the writing, thoughts, ideas and other works of people are recognised.

Also, the terms reference and citation are also often used to refer to the same thing. **Citation** is the in-text acknowledgement of the source, while the complete information of the source at the end is called the **reference**.

There are several thousands of referencing styles, with most being variations of the Harvard, Vancouver and America Psychological Association (APA) styles.

Research Goal Statement, Aims, Objectives, Research Hypothesis and Questions

Goal Statement

This captures the purpose for the research, which is fundamental to achieve results. It is a declaration of the intentions and expectations of what the research is expected to achieve.⁹

Aims and Objectives

The formulation of the research aims and objectives are very important steps in any study, and must be SMART. (Specific, Measurable, Attainable, Realistic and Time bound)

Aims

The intention or an aspiration of the research is called the aim. It must be well articulated, so that the identification of when the research achieves its set goals is simple¹⁰.

Objectives

They are the critical stages of how the research team will take to achieve the study aim. It describes the what, why, who, when and how questions. Constant re-reading of the objectives during the research helps to stay focused.

Research Hypothesis and Questions

Research hypothesis and questions are almost alike techniques that are used to help guide the research. Their formulation is guided by the research aims and objectives. The hypothesis is a statement, while the research questions are questions.

Research Hypothesis

This is an educated guess following the review of existing knowledge in the research subject area. Therefore, the result of the research is either to confirm or disprove the hypothesis.

Research Question

The research question is the question that the research provides answers. It must be concise, clear, focused, complex, arguable.

⁹ McAlpine, L., Weston, C., Bertiaume, D., & Fairbank-Roch, G. (2006). How do instructors explain their thinking when planning and teaching? Higher Education

¹⁰ Research aims and objectives. Future learn.com

Manuscript and Grant Application

Manuscript

A written work that has not been published. Examples include work under review for publication, drafts, end of module papers, thesis and yet to be completed writing.

Article

This is the finished, reviewed and published manuscript. The review can be self or peer. Peer review is the gold standard. Articles are published in academic and professional journals, newsletters and blogs

Grant Application

This is the written, and/or verbal description of how an applicant plans to meet the grantor's stated requirements for funding of research, tuition or other academic pursuit.

Proposal

Proposal is the first step in most aspects of research and academia including research, scholarship and fellowship applications. It is the structured and persuasive written document that is designed to convince the recipient (someone/organisation) to accept the writer's intention as sound and worthy of the sought for support. The common contents of a proposal are introduction/background, problem statement, aims, objectives, methods, results and summary/conclusion

Concept note

This is an abridged proposal. A brief summary of what the proposed project aims to achieve and how it will be achieved. Most donors now request for a concept note of 2 to 4 pages, before calling for the full proposal. Introduction, objectives, results and budgets are the common components of most concept notes.

Policy brief

Policy brief is a well-articulated and interpreted evidence obtained from rigorous research that is presented to top government functionaries aimed at influencing the policy of government.

According to World Health Organisation, "policy briefs begin with a description of a policy problem, then summarise the best available evidence to clarify the size and nature of the problem, describe the likely impacts of key options for addressing the problem, and inform considerations about potential barriers to implementing the options and strategies for addressing these barriers"¹¹.

To many in global health, Policy Briefs are one of the best ways to translate knowledge for results.

¹¹ World Health Organisation, Evidence informed policy making.

<https://www.who.int/evidence/sure/policybriefs/en/>

Additional Resources

S/ N	Topic	Internet
1	Public Health in Africa	. www.publichealth-edu.org
2	Plain language	https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language
3	Policy brief	https://www.who.int/evidence/sure/policybriefs/en/
4	Research aims, objectives and questions	https://www.futurelearn.com/courses/research-construction-management/0/steps/75090#:~:text=A%20research%20aim%20expresses%20the,end%20of%20a%20research%20project.&text=Research%20objectives%20outline%20the%20specific,to%20achieve%20your%20research%20aim.
5	Scholarships, grants, fellowships, jobs	https://opportunitydesk.org/ https://www.growglobal.health
6	Mentors, research expertise or collaborators by researcher's name, keywords and disciplines for TDR Experts in infectious Diseases of poverty.	https://profiles.tdr-global.net/