Facilitating the PhD Research Process: Guides for Identifying Research Problem and Establishing Research Gap

Abdu Ja'afaru Bambale, PhD
Department of Business Administration and Entrepreneurship
Bayero University, P.M.B. 3011
Kano, Nigeria

Abstract

Using content analysis technique, this paper attempted to provide guidelines for identifying research problem or establishing research gap in a major research especially PhD, which requires researchers to make major contributions. Providing guidance to researchers especially inexperienced, who have embarked on a major pursuit such as PhD, could not only help them successfully finish writing their theses within a time frame of 3-4 years, but would also help in producing quality research output. In the process of accomplishing its mission, this paper has offered definition and explanation of underlying concepts including research, research problem, research contribution and the PhD. As a mark of responsibility, universities, senior faculty members, experienced scholars should facilitate understanding of research process and techniques for quality research to research community who are especially novice and in dire need for guidance through workshops, conferences and publications.

1. Introduction

Many universities provide little guidance to PhD students on how to adequately and qualitatively write standard thesis (Massingham, 1984). Instead the Graduate School of the universities spent much efforts on communicating the conditions for the award of degrees stressing requirements such as the size of the paper to be used and the margins to be left on each side of the paper, font size and type of binding to be used etcetera. However, most PhD students need knowledge of technicalities for writing a thesis that could demonstrate a distinct contribution to a body of knowledge; they need knowledge about original investigation or scientific testing of ideas, which eventually could be worthy of publication (Moses, 1985).

Too many students drop out of doctoral programs or take too long to finish, prompting some universities to question what they could do to help stop or ameliorate the problem (Tamburri, 2013). In Canada, for example, the proportion of PhD students who successfully complete their degrees within nine years has risen across all disciplines, and completion times remain long and in some fields have even increased (Tamburri, 2013). Similarly, Nenty (2009) argued that it is common with PhD research for most of the students to encounter problems in the design and carrying out their research work and completing the PhD thesis or dissertation. At the beginning, for example, the first one or two years of PhD research, the main problem has been how to find research gap or how to logically and convincingly establish and defend the research gap. Unfortunately, some research students who are not properly guided or supervised get frustrated and drop out of their programs because of these problems (Nenty, 2009).

Only a few scholars wrote on PhD research process. However, most of the contributions that were found in the literature have been too broad and were written in book form with titles such as how to write or get PhD (Phillips & Pugh, 2010; Wisker, 2007; Wolfe, 1996). Other contributions regarding to academic research and particularly PhD were written on major aspects of the PhD research such as research proposal, critical literature review, research methodology, and reporting findings (Chow, 2002; Knafl & Howard, 1984). However, these contributions were largely published as book chapters in texts or edited books. Thus, only a few journal publications on aspects of PhD thesis are found in the literature (Ellis & Levy, 2008; Faryadi, 2012; Nenty, 2009). Moreover, PhD research students still report negative emotions regarding their college careers, ranging from boredom to anxiety, frustration, to feeling directionless or frustrated with the effort required (American-Federation-of-Teachers, 2011).

More specifically, PhD students were reported to have been experiencing frustrations because of not being able to theoretically develop and establish coherent ideas regarding their research (Phillips & Pugh, 2010). These are important issues that may warrant continuous studies to find ways of improving ways for conducting rigorous research such as the PhD.

Although, previous studies have made great contributions in facilitating understanding of the research process, they appear to have treated most of the research issues superficially with less focus on specifics. Most of the previous contributions paid less attention to the nitty-gritty of issues such as approaches for identifying and establishing research gap. It is against this background that this paper is written. Therefore, this paper is aimed at providing guidelines to prospective and beginners of PhD research on how to identify their research gaps to help them make their research meaningful to the body of knowledge and acceptable to their supervisors within a reasonable period of their PhD journey. Fundamentally, the idea of this paper was borne out of author's experience and the desire to use the acquired knowledge to contribute toward accelerating the PhD process for the beginners. Therefore, this paper is different from the previous ones in the sense that the paper is substantially practical and premised on identifying and establishing research gap, without which a PhD research could be of less value to the body of knowledge.

This paper comprises of four sections including the introduction and general background, conceptual definitions, guidelines for identifying research problem, and finally conclusion.

2. Conceptual Definitions

This section provided basic definitions of terms that underline this paper. These concepts include research, problem, research problem, PhD, and research proposal.

2.1 What is Research?

Fundamentally, research is defined as "a process or steps used to collect and analyze information in order to increase our understanding of a topic or issue" (Creswell, 2005, p. 3). Therefore, research could be seen as an investigation for finding solutions to scientific or social problems through the use of systematic and unbiased means. In other words, it may be seen as utterly search for truth and discovery of the unknown through systematic and truthful manners. Thus, important thing about research is that it a process of collecting and analyzing new information that will enhance the body of knowledge. Generally, whether in pure science or social science domain, research is carried out for the following reasons:

The prime objectives of research are

1. To find answer to a particular problem
2. To discover new knowledge
3. To verify previous findings
4. To understand cause and effect relationship
5. To develop new concepts, theories or scientific tools to solve problems

Therefore, research helps in development of the fields of physical and social sciences as well as individuals and organizations. Specifically, research is important in the following areas:

1. Research help to provide a theoretical or practical solution.
2. Research provides guidelines for solving problems as it represents a fountain of knowledge.
3. Research provides basis for many government and institutional policies and actions.
4. Research helps government and business industries to gain higher productivity, superior performance, and quality products or services.
5. Research on existing theories and concepts help us identify the range and applications of them.

Having clearly discussed what research is about, next section dwells on discussing the basis of research (i.e. the research problem), or what others may refer as research gap.

2.2 What is Research Problem?

Any meaningful research starts with problem. To see or identify a problem for research does not call for any mechanical, or highly structured process orientation (Nenty, 2009). However, problem identification is made easy if the researcher has knowledge of the research domain or has considerable level of creativity.

Basically, problem is defined by (Merrian-webster-online-dictionary, 2013) as a question raised for inquiry, consideration, or solution. Similarly, (Cambridge-online-dictionary, 2013) defines problem a situation, person or thing that needs attention and needs to be dealt with or solved. Regarding the research perspective, Ellis and Levy (2008) stated that a research problem is defined as a general issue, concern, or controversy to be addressed.

Without problem there will not be research. Thus, research problem provides the basic foundation for any systematic and credible research. It is described as the unifying thread that runs through all the elements of the research endeavors (Leedy & Ormrod, 2005). For example, a well-defined research problem would naturally lead to the statement of research questions, objectives, hypotheses and selection of a methodology for measuring the research variables. Put in another way, the research problem forms the basis for the interrelatedness of the distinct elements such as research questions, objectives of the study, hypotheses, methodology, findings and conclusions that are entailed in research. For example, in the organizational behavior perspective, increasing rate of absenteeism among employees of a particular organization may constitute a practical issue or problem to be investigated.

In essence, a research problem is said to exist when some or all of the following conditions were met:

1. When current state of affairs differs from the ideal state. This means a research problem exists when there is clear manifestation of problem within a particular organization, industry or context. Research problem should be potentially disruptive. This kind of research problem is commonly known as practical problem, which presents opportunity for making practical contribution. Furthermore, a problem is "practical or managerial" in nature if a simple observation of employees within a particular context reveals a notable absence of voluntary behaviors. A problem can qualify for a serious research such as Ph D only if it clearly engenders some negative impacts. However, the impact of the problem may not necessarily be colossal, but it must be observable.
2. Inadequate or Absence of Solution: Research problem does not have available or adequate solutions. Problem could be worthy of research if solutions are unavailable. When there is no acceptable solution at hand (Sekaran, 2003), that is there is no documented evidence in the literature to show that solutions have been prescribed. Additionally, research problem is said to exist when a particular solution is demonstrated in two opposing directions, suggesting what is popularly known as mixed or contradictory results (Creswell, 2005). This situation is when previous studies demonstrated the tested model as having significant and not significant effects. Thus, indicating a need for introducing a mediating or moderating variable which cause a more desirable and reliable state. This kind of research problem is commonly known as theoretical problem, which presents opportunity for making theoretical contribution. Therefore, for a research problem to warrant research magnitude of PhD, the problem must be both "practical and theoretical".
3. Currency: Research problem should be current and active. A problem that is not current may not provide a good justification for research.

In PhD research students are expected solve two types of problem, namely practical and theoretical. In PhD research students are expected solve two types of problem, namely practical and theoretical.

2.2.1 Practical/Managerial Problem

Research problem is practical when it is active and felt within a particular context. Thus, practical problem presents an opportunity for making practical contribution. Kerlinger and Lee (2000) asserted that for any research there has to be a practical or identifiable problem that needs to be solved. The practical or managerial aspect of the research problem is explicitly and elaborately discussed at the introductory part of PhD research thesis. It is necessary to explain the problem and justify why the study is important (Creswell, 2005) . Specifically, at the introductory background section, a PhD student is expected to present and analyze the practical problem, with a high level of clarity. Students are expected to explain the nature of the problem broadly and then narrow it to the scope of the investigation or aspect the study is expected to make contribution. Furthermore, Ph D student is expected to discuss how and why the problem that is intended for investigation is relevant for research. This could be achieved by explaining the current and adverse consequences of the problem. Students' thesis should be tailored toward solving substantial problems not trivial problems that could not sufficiently increase wisdom or that may not be useful enough to a large population.

Depending on the chapter one structure style, practical problem is discussed, under background to the study section, as a major issue surrounding the research. In discussing the main issue and using some ideas from Nenty (2009), PhD students should be mindful of the following important hints:

- Discussion should largely centre on the main issue that exhibit great impact on persons, units, organizations, society or entire humanity. This is appropriate because PhD research should be tailored toward solving substantial problems that could sufficiently increase wisdom or that may be useful to a large population. Therefore, researchers should avoid discussing trivial problems/issues.
- Discussion of research issue should be based on current observations, expériences and opinions of the researcher or some people that reflect or bear on the existence of the problem.
- Discussion should be clear and elaborate. Researchers must try to make readers see the problem at hand and feel that the solution to the problem is important to them.
- Students should use current views and opinions about the problem such as those expressed in newspapers, bulletin and magazine to justify existence and extent of the problem.
- Where available, students should present data and figures that highlight the existence of the problem. Data is a very important resource that clears doubts about occurrence of particular events as basis for verification has been document.
- Unless where necessary for stressing a particular point, students should avoid the use of theory or review of empirical literature while explaining practical problem of their studies. Use of current information and data that highlight research issue is more important to readers at beginning of a research.
- Discussion and analysis of the historical, cultural and social background if the research problem has any history or any cultural or sociological root. This discussion is important because it could convince readers about the researcher's commitment and competency to provide solution to the problem.

Adhering to above hints while presenting research issue could help provide enough information to capture and keep attention of the readers and wet appetite to read the work.

2.2.2 Theoretical/Literature Problem

Effective solution to any human problem is based on an application of one existing theory or the other or an application of what is known so far (Nenty, 2009). Hence, researchers using quantitative approach need a theory related to the problem to provide a foundation and guidance for solution to the problem under investigation. Theory provides three important things for quantitative research including provision of a conceptual framework, serving as a vehicle for incorporating prior knowledge, linking research to the larger body of knowledge in the problem domain (Hair et al., 2001).

Identifying a problem in a particular domain or organization is often not difficult, but most times identifying research problem theoretically from the literature is not an easy task. The first thing that poses a major challenge to most PhD candidates is identifying the research gap in the quest for attaining the PhD. It is common for PhD students to spend complete one year or two studying the literature to come up with a theoretical gap, or what is commonly called research problem (Leedy & Ormrod, 2005). In research context, "new knowledge" refers to information not already present in the body of knowledge relative to a particular domain. Therefore, even if information appear to be new to a specific domain, it would not be considered new if it was already present in the research literature of that domain (Hart, 1998). Thus, for any PhD endeavor to be considered research, it must be able to demonstrate identifiable new knowledge or research gap. Theoretical or literature problem is explicitly and elaborately discussed as 'statement of the problem' at the first chapter of PhD thesis. Statement of the problem explains the problem and justify why the study is important (Creswell, 2005). The problem statement should explain "how the research builds on previous theory or contributes to the development of new theory and the likely uses of the new knowledge and the potential importance of these uses" (Jacobs, 1997, p. 1). Problem statement is argued to be the nucleus or heart of any quality research around which other parts revolves (Jacobs, 1997; Leedy & Ormrod, 2005; O'Connor, 2000). Therefore, a good statement of the research problem must integrate concepts and theoretical perspective of the literature (O'Connor, 2000).

It must be able to address six questions including what, how, where, when, why and who (Creswell, 2005). First, on the question of what, a good statement of the research problem must succinctly state what the actual thing going wrong that the research will address.

Second, on the question of who, a good statement of the research problem must state some scholarly literature references that support the presence of that problem and describes the nature of their support.

Third, on the question of how, a good statement of the research problem must describe the impact of the problem. Fourth, on the question of where, a good statement of the research problem must state who bear the brunt of the problem, for example, a particular person, unit, group, organization or society. Fifth, on the question of when, a good statement of the research problem, if necessary, must describe the nature of impacts the problem makes as a result of time variation. Six, on the question of why, a good statement of the research problem must describe underlying causes of the problem.

There seems to be a close relationship between research and PhD, thus having understood the meaning of research, its objectives and uses, the next thing this paper discussed is what PhD is about.

2.3 What is PhD?

A PhD is an abbreviation that originated from North American institutions that stands for 'Doctor of Philosophy'. It is sometimes referred to as a doctorate. It is the third tier degree in the academic hierarchy. In the UK, a Doctor of Philosophy is also known as a DPhil. According to the free online dictionary PhD is defined as "a doctorate usually based on at least 3 years graduate study and a dissertation". It is the highest degree awarded for independent original contributions to knowledge. The Doctor of Philosophy originates from the Latin expression *philosophiae* (i.e. love of wisdom) *doctor,* which dates back to 19th century Germany (Noble, 1994).

An undergraduate degree at first class level is a minimum requirement for admission into a PhD program. However, most PhD candidates require a bachelor and master's degree to qualify. PhD applicants are usually expected to submit a research proposal to the department they wish to undertake their study in for assessment of relevance and sourcing the interested and qualified faculty members to supervise the candidate. A PhD proposal usually outlines what a candidate intends to investigate, how the proposed research relates to other research within the field of study and what methods the candidate intends to use in carrying out the research. A good PhD research proposal is necessary at the beginning of every PhD journey without which candidates cannot proceed to the main research. However, PhD requirements could vary from one university to another, but generally universities require the completion of coursework and comprehensive examinations, successful presentation of research proposal and successful presentation of a thesis or dissertation at an organized viva session.

Some of the major motivations for a high level research particularly the PhD include getting benefits such as promotion, salary increment, better employment, taking a teaching position in a university or reputable international organization, getting recognition and respect. Specifically, it was demonstrated that half a number of reported research is motivated by the need to publish in order to earn a degree, job or promotion (Sharp, 2002). In addition, some people may go for PhD just to get joy of doing something creative or to have a sense of personal worth and accomplishment. Despite the personal importance of these motivations for research such as PhD, researchers should be more motivated by the intended impact their studies would make to the body of knowledge and humanity. Being motivated only by practical personal considerations may not necessarily produce results of greater interest or value (Ellis & Levy, 2008). Thus, researchers should be aware that what makes research to be of greater value and interest includes: First, the impact it makes on solving impending problem. Second, the impact it makes on triggering future research or other researchers.

Having clearly discussed what a problem and forms of research problem, next section would dwell on discussing what is actually meant by finding research gap or problem and guidelines to help PhD students and academic researchers find meaningful research gap or problem.

3. Research Gap

It is easy to find a problem needing research; however it is tough to subject the problem to investigation such as the PhD research. Research gap is the existence of concrete and tangible need for a particular research. It is said to exist when there is a real, identifiable conceptual connection between the problem in the literature and the research being conducted to address that problem (Creswell, 2005). Without the conceptual connection, a researcher would be left with only new insights from a study that is more of random luck than scholarly work.
For a viable and well grounded research work, researchers should provide a "yes" answer to one or more of the following questions regarding filling the research gap (Creswell, 2005):

1. Could a known gap in the body of knowledge be filled? The research gap found in the literature should be fillable.
2. Could previous research be replicated and expanded by looking at different variables sample, and/or environment.
3. Could previous research be expanded by carefully examining and integrating some identifiable aspects, for e.g. dimensions or measures?
4. Are there documented problems needing the current available solutions?
5. Is the theory (i.e. the major premise) that provides the foundation to your proposed study clearly understood?

3.1 Guides for Finding Research Gap

The identification of the research gap or problem is said to be the most difficult and important part of the whole PhD research process (Kerlinger & Lee, 2000). There are no hard rules which PhD students must follow to determine research gap. Using some inputs from the literature (Ellis & Levy, 2008), and experiences of the author, this paper has provided guidelines or activities for identifying a research gap or determining a research-worth problem for PhD researchers. These activities include personal hunch/observation, literature search, literature mapping, synthesizing the literature, consulting with experts, presenting research idea and participating in research skills development programs.

3.1.1 Personal Hunch/Observation

In most cases problem starts with vague or unsystematic thoughts and undergoes a series of refinement steps (Kerlinger & Lee, 2000). Some people are first motivated to go on research as a result of their personal interests, hunches, and feelings (Kerlinger & Lee, 2000). In more scientific way, (Leedy & Ormrod, 2005) argued that problems could be observed in any domain of interest through such things as scholarly conferences, and/or observation of phenomena (Kerlinger & Lee, 2000), thus suggesting a good research starts with observation of phenomena. Moreover, research gap cannot just be determined in a vacuum, it must start with some observed problem. Personal experiences of the researcher may also provide good insight into the possible research problems. For example, a PhD research in management may start with simple observation of employee behavior regarding to reporting to work, which may lead to observing increasing rate of late coming and/or absenteeism. Limiting the researcher's observation of phenomenon on the basis of personal interest of the researcher may be more appropriate and may make the starting point viable for identifying a research worthy problem (Ellis & Levy, 2008).

3.1.2 Literature Search

However, it is important to note that just because the thought-out or observed problem is real; it does not completely justify the intended research or makes the problem to be a research worthy one (i.e. research gap). In fact, it might be possible that a number of solutions to the observed problem were documented in the scholarly literature (Kerlinger & Lee, 2000) without the knowledge of the researcher or organization. Therefore, to establish the observed problem as an actual research problem, the PhD researcher must anchor the problem with the context of the existing body of knowledge (i.e. literature). At most times research problem originates from theoretical knowledge of a research domain. A PhD researcher who does not have sound theoretical knowledge about the interested research domain could not propose possible solution to a practical problem. It is what is documented in the literature about the problem area that provides the basis for industrial practice or for further research to solve any related problem (Nenty, 2009). Extensive reading of scholarly articles is the most important step in identifying problem or gap to fill. Thus, an exhaustive understanding of the body of knowledge related to the field or topic of study greatly helps in finding research gap. Knowledge of the literature is a prerequisite for understanding that which is unknown (Davis & Parker, 1997). Reading the scholarly literature must be focused on leading journals, standard conference proceedings, and renowned scholars in the domain of interest (Levy & Ellis, 2006). Additionally, consulting recently finished doctoral theses could provide good opportunities for valid leads to scholarly literature on the topic of interest and eventually leads to research gap.

Therefore, one essential way to establish research gap is find out what variables (i.e. independent variables) were already used to solve the researcher's topic of interest (i.e. the dependent variable). This helps to ensure that the researcher avoids 'reinventing the wheel', that is needless duplication of a research that has already been done.

In addition to the fact that literature gives the researcher information on what previous studies have done to solve a particular problem, careful and smart literature search could also reveal what is *not* known in the area, in other words, what still needs to be done.

Somewhere before researchers conclude their submissions in scholarly literature, researchers make suggestions for future studies based on their current findings. This particular section offers important opportunities for PhD researchers to explore and navigate towards establishing research gap.

At this juncture, the researcher could make his/her job of literature search easier using internet search techniques such as searching for selected keywords on data bases such as Emerald, ProQuest, EbscoHost, ScienceDirect and host of others.

3.1.3 Literature Mapping

Literature mapping is a graphical technique that helps researchers to visualise connections and relative relationships among studies in a particular domain. For example, either add the literature to the relevant area of your map or create a new conceptual area if necessary. How you visualise and create your map is entirely personal. It is useful for PhD research because it can help to identify issues such as proximity and connections among studies in terms of ideas, variables, context, methodology, findings and future direction. Against this background, a well designed and comprehensive literature mapping may help to understand opportunities and potentialities for viable theoretical contributions. Not only that, a good literature mapping helps researchers in synthesizing their literature, thus helps in the overall writing of literature review chapter.

When students have reached a satisfactory stage with the literature mapping, it is advisable they show it to the supervisors and ask for feedback. A good literature mapping could also be a yardstick for measuring a researcher's commitment, progress and honesty with which he/she confronts the onerous task of PhD. This may also lead to earning the supervisor's confidence, better relationship with supervisor and supervisor trust. There is no one best way to create literature mapping, however, students can achieve this broadly by identifying the key issues or aspects across the literature and then create table on a Word or Excel sheet that fits the key issues or aspects found in the literature. Every time students read an article they should extract the relevant aspects and paste on the map, thus continuously updating the map.

3.1.4 Synthesizing the Literature

The much desired research gap at the beginning of a scholarly research cannot be established using a single source (Creswell, 2005). Similarly, it is unlikely that two or more authors find precisely the same relationship effects and suggest particular direction for further research. Therefore, a PhD researcher must establish research gap or a research-worthy problem by integrating outputs derived from a number of previous studies (i.e., by synthesizing the literature). The literature synthesis results in creating an integrated whole of literature, which significantly and meaningful exceeds the sum total of an individual article contribution (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Synthesis involves integrating the insights of a number of different but related scholarly

Figure 1: Synthesizing the Literature to Establish Research Gap

One of the prominent early studies that attempted to investigate the effect of servant leadership on OCB is Ehrhart (2004). He found that servant leadership indirectly influenced OCB, specifically helping behaviour, and conscientiousness. Additionally, Walumbwa, Hartnell, and Oke (2010) investigated the mediating effect of commitment to the supervisor, self-efficacy, procedural justice climate, and service climate on the relationship between servant leadership and organizational citizenship behaviors (OCBs). Their results revealed partial mediation and recommended for testing other mediators under which OCB will be more significantly enhanced. Another study conducted by Vondey (2010) revealed that servant leadership was significantly but partially correlated with OCB. Since studies on servant leadership and OCB study are still new and limited (Ehrhart, 2004; Vondey, 2010; Walumbwa et al., 2010), more studies are needed to better understand the relationship and to validate further the initial significant relationship between servant leadership and OCB by investigating their relationship in a different context.

Psychological ownership is a state of mind in which an employee develops possessive feelings for the target (Van dyne & Pierce, 2004) such as the job (Peters & Austin, 1985), organization (Dirks, Cummings, & Pierce, 1996), the products created (Das, 1993); the practices employed by the organizations (Kostova, 1998); and specific issues in the organizations (Pratt & Dutton, 2000). Servant leadership can be an essential factor for achieving psychological ownership among employees in organizations. Because of certain special features of servant leaders including humility, caring flexibility (Geller, 2009), and egalitarianism (Waterman, 2011), psychological ownership could manifest as a result of servant leadership. Therefore, psychological ownership could be one of the expectations from workers in return for experiencing servant leadership.

3.1.5 Consulting with Experts

articles and composing a generalized statements based on the different instances (Ellis & Levy, 2008). The figure 1 below demonstrates an example of synthesizing the literature and establishing research gap or problem. Once a research gap or problem has been identified, PhD researcher should proceed to get feedback from experts including the assigned supervising faculty or professor (Leedy & Ormrod, 2005).

Feedback on the potential research gap can be done via two main approaches. The first is by seeking feedback from available experienced researchers. According to (Leedy & Ormrod, 2005) as reported in (Ellis & Levy, 2008) a novice researcher such as a new PhD researcher may obtain feedback on their proposed research gap/problem simply by asking their own supervising professors questions such as: "Is the established problem adequate for PhD research"? "What next to be done for improvement?

3.1.6 Presenting the Research Idea

Again after a research gap or problem has been identified, PhD researcher needs to immediately move into action to publicize his initial research efforts by making presentation in a recognized conference or colloquium. The conference or colloquium proceedings or journal publication that follows the presentation serves as an important step in establishing the research gap, as well as concretizing it in the selected research domain. Specifically, presenting the research problem in a conference or colloquium serves two important functions: (1) Feedback regarding to viability and improvement of the research framework is gained; (2) The framework becomes published and thus placing the proposed research framework in the global data bank. Visibility of the research framework in the literature protects the idea from being duplicated in the future. Thus, unnecessary delay in publishing the research framework may result to proposition of the same research framework by somebody elsewhere, thus invalidating or reducing the strength of research problem. It should be remembered by all PhD researchers that there will not be PhD without original contribution to the body of knowledge.

3.1.7 Participating in Research Skills Development Programs

There are a number of research skills development programs in form of workshops, seminars, discussions group, and doctoral support training et cetera that are often organized within or outside university campuses. These events most a time help PhD students to better understand and frame his/her research problem and issue. PhD program poses a huge challenge and stress especially to novice researchers who are coming to face actual research for the first time in their academic career. In this case meetings with the supervisor or simply attending the formal PhD class may not necessarily be enough. The researchers need to do much more to better understand basic research skills that could help them in defining and identifying research problem. Researchers could be kept much more current about issues and problems in their research domain through participation, networking and corroborating with colleagues and experts found in various informal academic groups than just attached to only one or two faculty members.

4 Conclusion

This paper could help new and prospective PhD students to have a good knowledge of the first and major challenge they have on their way to achieving PhD dream by clearly and simply delineating concepts of research, research problem, and some guides for a sound research gap. Embracing the guides could ease researchers' understanding of how to make practical and theoretical contributions that are just necessary for any PhD thesis to make. Important to all researchers especially the PhD is that research should be more motivated by the impact it would make to the body of knowledge and humanity rather than motivated by personal benefits. Research studies driven by only by practical personal benefits may not necessarily produce results of greater interest or value at the end of the endeavor. Generally, researchers should be aware that what makes research to be of greater value and interest are the impact it makes on solving impending problem, and the impact it makes on triggering future research or other researchers. It therefore follows that sound understanding of scientific research, research problem, research contribution and the PhD at the beginning of a PhD journey is paramount. Universities and scholars should do everything humanly possible to help novice researchers understand research process and techniques for quality research, which is a necessary requirement for rapid development of high quality manpower that are needed in this fast changing and complex world.

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