Review Article

Examining the Relationship of Chapter 1 to Other Chapters in a Dissertation or Thesis

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The review examined the relationship between Chapter 1 and its subsequent Chapters in a dissertation or thesis, informed by a constructivist paradigm utilising a qualitative approach. It further demonstrated how the contrasting ontological and epistemological assumptions and models of human beings that the researcher brings to the research process have direct implications for one's methodological concerns in a project. To ascertain these philosophical assumptions, thirty postgraduate projects were purposively selected, and theoretical saturation determined the sample as depth was sought employing a grounded theory. Different Chapter 1s of various dissertations and theses were scrutinised first and used to develop a framework of analysis, which was later fine-tuned using surveyed literature. Guided by an interactive process combining the elements of content and inductive thematic analysis, the major components of the study were identified, namely the research problem, objectives, and sub-problems or hypotheses. In turn, these influenced the literature surveyed, research methodology utilised, analysis and interpretation of data, conclusions drawn, and recommendations made. These technicalities, if carefully observed, are meant to guide postgraduate students to produce a quality product independently and reveal the symbiotic relationship that exists between Chapter 1 and its subsequent Chapters in a dissertation or thesis.

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Introduction

Research, to an inquisitive mind, commences with a research problem (RP) which determines the process of data gathering for analysis and interpretation in a planned and systematic fashion for the purposes of

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resolving it[1][2][3][4]. Phenomena can either be empirically observed using inductive methods or verified based on preconceived notions using deductive methods[5][1][6]. Therefore, research viewed from this perspective would utilise either a qualitative or quantitative methodology respectively, with the middle view adopting both (i.e., deductive-inductive methods), herein referred to as mixed methods[7][8]. It is through such scientific methods of inquiry that researchers try to comprehend the world around them when they conduct dignified research[6].

The nature of scientific inquiry a postgraduate student undertakes is written in an academic document called a dissertation or thesis. The former is smaller in scope and is usually associated with Master's students, whereas the latter is larger and longer and is done by PhD students[9]. Both research efforts are for examination purposes and advancing knowledge in a format prescribed by the parent university, which students must adhere to religiously[10][9]. Furthermore, in academic circles, a dissertation or thesis is a rite of passage to the world of scholarship[11] and should be taken seriously by students and their supervisors. Therefore, the purpose of this review is to examine the major components that constitute Chapter 1 in a dissertation or thesis and illustrate how these components relate to subsequent Chapters so that postgraduate students may undertake such an academic endeavour independently or with little supervision.

Several studies have been conducted on the challenges faced by postgraduate students in the utilisation of different epistemologies[12], pedagogical shortfalls, and supervision[13], the development of research proposals, writing all sections of a project[14], and writing the discussion section[15]. Similar literature is also abundant on the market (including university prospectuses) giving students guidelines on how to write different dissertations or theses chapters, with very few of them demonstrating the symbiotic relationship that exists among them, with specific reference to Chapter 1. Viewed from this angle, Chapter 1 and its major components become the guiding star which, like a thread, runs through the literature surveyed, research methodology (RM), data collection methods, analysis and interpretation procedures, and the conclusions and recommendations drawn thereafter based on the empirical investigation[14]. This thought buttresses the argument that Chapter 1 is introductory to the whole project and serves as a referent point as it unfolds[10][11]. It is the lack of this symbiotic relationship among chapters which the researcher has observed in some projects as a supervisor of postgraduate students over a period of seven years and as an internal/external thesis examiner, which this review

intends to address as it seeks to guide them (students) to conduct dignified research in a scientific and objective manner[16].

Background

Research that postgraduate students conduct in conventional tertiary institutions at the Master's or PhD level, respectively, helps them become budding researchers in the discipline of dignified research as they uncover truths meant to improve educational practice. It also further enables them to earn a degree qualification, generate new knowledge, or modify it depending on the prevailing circumstances[5][10][11]. However, the voyage of discovery is not a pleasant one. For that reason, students need proper initiation into the tradition of research right from the onset if they are to be transformed from being consumers of knowledge to generators and disseminators of it[10]. While most of the knowledge individuals possess has been discovered through science and transmitted from one generation to the next, some of it is acquired through personal experience and discovery, and the other is sought from experts[5][6][17]. Such knowledge is based on agreement and experiential reality[5], to which postgraduate students must make a contribution in their personal capacity.

For postgraduate students to be able to play a hegemonic role in the research arena, knowledge of epistemology, which [18] views as "a branch of philosophy that investigates the origin, nature, methods and limits of human knowledge," must be handy. By its nature, it demands that postgraduate students, as inquisitive individuals, use science to discover reality through their personal experience, utilising an appropriate RM which [1] refer to as "an overall plan which produces a scientific enquiry," rather than taking things for granted[19]. Therefore, students in pursuit of scientific discovery using an appropriate RM must know that not all knowledge gained through personal experience and authoritative sources is credible. Time has proved that experts of whatever magnitude cannot be exclusive possessors of credible knowledge since humans are not infallible[1].

Likewise, traditional knowledge, which is based on agreement and experiential reality, although discovered through a scientific process, may be a hindrance to future scientific endeavours too since it may be unreliable and invalid[5]. For instance, some of it acquired through empirical observations can also be impeded by overgeneralizations when based on a limited sample[5]. For that reason, RPs must be solved scientifically through a research process that seeks to construct theories carefully, systematically, and later on tested empirically so that explanations are grounded in facts, not "common-sense

knowing"[1]. Such a feat can only be successfully achieved through dignified research that is replicable and is subject to public scrutiny by fellow professionals, more so, since postgraduate dissertations or theses are scrutinised by both internal and external examiners for academic compliance[10][11].

Therefore, in this context, educational research must be viewed as a combination of experience and reasoning if the truth is to be discovered both in natural and social sciences[1][20]. Above all, the scientific procedures employed must have sufficient safeguards to protect the research process from human error and bias[1]. All these are technical skills that postgraduate students must exhibit through project work if their academic efforts are to be appreciated by the academic community. The skills must be embedded in Chapter 1 and its subsequent chapters if the findings are to be credible.

Literature Review

The concepts of social reality

Educational researchers are convinced that research entails two contrasting views of social reality. On one hand, there is the objective view of social reality which utilises deductive methods credited to Aristotle's syllogism method of inquiry[1][21]. Such a view claims that reasoning starts from a major premise, and then questions meant to unravel the truth follow in a logical manner from the general to the particular until a conclusion is deduced from a valid premise[1][21]. Knowledge discovered in this way is based on preconceived notions which are supported by authoritative sources; laws, rules, or other widely acceptable principles[6]. A postgraduate researcher employing objective research methods utilising deductive reasoning would therefore test or verify theories or hypotheses for acceptance or modifications and generalisations, which are hallmarks of a quantitative study[22].

On the other hand, there is the subjective view of social reality which utilises inductive reasoning associated with Baconians[1]. The movement arose when logic and authority had ceased to be regarded as conclusive means of proof and instead became sources of hypotheses which would empirically be tested for validity[6]. In that perception, inductive reasoning was viewed as an empirical RM which was designed to avoid mental fallacies[6]. It disregarded quantitative notions of observations from which general principles were developed[1][6][21]. Instead, it demanded that postgraduate students who subscribe to this view must assemble several observed facts and study them thoroughly so as to develop hypotheses which would eventually lead to generalisations[1][6][21]. Such a thrust would compel them to

work from the participants' views to build broader themes and generate a theory interconnecting themes utilising qualitative methods to investigate subjective reality[1][6].

It is against that background of contrasting views that [23] identified four assumptions underpinning concepts of social reality which students must be conscious of. That is, the nature or essence of social phenomena being investigated (ontological assumptions), the way the study of knowledge is disseminated (epistemological assumptions), and the study of humans as initiators of their actions or being acted upon (human nature), which have serious implications on the RM to be adopted for any study at the postgraduate level.

When a postgraduate student's view of the social world is realist and believes that knowledge is external to the knower and out there, his or her job would be to use a range of traditional objective research designs such as experiments and surveys to do the following: clearly isolate causes and effects, properly operationalise theoretical relations to measure and quantify phenomena, create research designs allowing generalisation of the results, and formulate laws[24][20]. Such methods are predominantly quantitative as they are meant to identify, define, and discover ways in which their relationships can be expressed[25][19][20] and how universal general laws may be discovered[5]. A quantitative RM in this respect, employing experiments, would demand that some variables be manipulated, a condition which makes social scientists prefer quasi- or natural experiments[2][16]. In the former, variables would be isolated, controlled, and manipulated in an artificial laboratory, whereas in the latter, sometimes it may not be ethical to set up a laboratory experiment on sensitive investigations involving humans[6].

Despite those differences, in either case, postgraduate students informed by this approach would need to collect large masses of numerical data using structured, technologically fine-tuned, and standardised instruments, and such data can only be analysed using inferential or descriptive statistics, thereafter reported in a structured manner using frequent tables, graphs, or figures[3][26]. Since the purpose of quantitative research is to establish universal general laws which may be generalised to the targeted population, the student must use probability sampling methods to select a representative sample from a heterogeneous population so as to eliminate research bias and validate the process[27][28]. The use of predetermined research designs in the RM makes the research process rigid and easily replicable[2][16].

On the contrary, a postgraduate student who holds a subjective and relativist view of the social world would commence from the assumption that humans are "initiators of their own actions with free will and creativity, producing their own environments"[6]. Such an orientation would enable the student to

utilise naturalistic research methods involving narratives, ethnography, phenomenology, case study, and grounded theory, among many, to investigate phenomena[25]. These methods enable the student to understand the way in which the individual creates, modifies, and interprets the world in which he or she lives[29]. In concurrence, [23] assert that "emphasis in this regard would be to understand and explain the unique case of the individual rather than the general and universal." Its emphasis on the particular and individual in understanding human behaviour compels the student to adopt an idiographic approach, which is qualitative in nature[6].

Whether consciously or not, a postgraduate student who engages in any research enterprise brings these contrasting views of social reality, which in turn influence the formulation of the RP selected, RM, research methods/designs, and data collection and analysis procedures to be employed[30]. Such knowledge does not only influence the conceptualisation of Chapter 1 but also its relationship to subsequent Chapters.

The conceptual framework

Nowadays, the debate on paradigms that characterised the 1960s seems to have taken centre stage in the conceptualisation of Chapter 1 in relation to its subsequent Chapters. A paradigm, in this context, is viewed as "a model or framework for observation and understanding, which shapes both what we see and how we understand it"[5]. Similarly, Bryman[31] perceives it as "a cluster of beliefs and dictates which, for scientists in a particular discipline, influence what should be studied, how research should be done [and] how results should be interpreted." Going by these perceptions, the use of a paradigm in a research process does not only offer students logical frameworks for creating theory but also helps them view social reality differently[5]. Besides, it also enables them to justify whatever route one would have taken in the exploration or explanation of phenomena[32]. Furthermore, it opens up new understandings, suggests different kinds of theories, and inspires different kinds of research, culminating in a basic structure underlying a particular philosophical thought which the postgraduate student intends to utilise in an attempt to develop knowledge[5]. While there are several paradigms that may be utilised to justify whatever ontological and epistemological position one would have taken in the research process, this review will focus on positivism and constructivism in an attempt to examine the relationship of Chapter 1 to subsequent Chapters in a dissertation or thesis.

Positivism

According to its proponents, positivism is premised on the fact that "all genuine knowledge is based on sense experience and can only be advanced by means of observation"[1]. Students who subscribe to this philosophy would study phenomena under investigation logically and rationally using the objective methods alluded to earlier in both natural and social sciences[5][18][1][6][25]. This orientation would be based on one's view of objective reality and would utilise deductive reasoning in its quest for the truth. It is this traditional philosophical thought that has dominated the scientific research process over time. Theories or hypotheses are tested or verified for acceptance, modifications, or rejections, which are hallmarks of a quantitative approach in a research endeavour[22].

Constructivism

Constructivism emerged as a reaction to the positivist movement and was born out of the painful work of anthropologists, sociologists, and psychologists as social scientists preferred a holistic approach to studying human behaviour[1][6]. Its proponents believed in learning from the direct experiences of an individual and how one interacted with others in a given natural environment, resulting in the subjective meanings derived from such situations[5][1][6][24]. The postgraduate student with this kind of orientation would employ naturalistic research methods to inductively investigate phenomena with the intention of generating or developing a hypothesis, theory, or pattern of meaning grounded in the data gathered, utilising a qualitative RM[25].

Within this realm of research, postgraduate students need to be advised that the methodology and methods of the research process must not be determined by the paradigm dichotomy but by what one would want to know and how to know it[22]. The way in which the RP is formulated, which is at the heart of every research enterprise, should determine the research process to be employed. However, where one's ontological and epistemological philosophical assumptions inform the RM and methods of the research process, one must refrain from encroaching in the paradigmatic domain of the other unless when using mixed methodologies[6][27]. Therefore, depending upon the theoretical position the student takes in the research process, he or she must either use a qualitative or quantitative approach, or both, to investigate the phenomenon under study. Research approaches in this study are viewed as "plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation"[25]. This perception implies that when students decide on what

research approach to adopt for their studies, the philosophical assumptions they bring to the research arena would inform the whole research process from Chapter 1 to Chapter 5 in a neat fashion. By the same token, the nature of the RP, the technical know-how, resources available, and audience would also determine the approach to be used[6][25].

Methodology

The ontological and epistemological assumption underlying this study was constructivism, utilising a qualitative approach as it sought to gain the subjective and multiple views of postgraduate students[5][1][25] on how they conceptualised Chapter 1 of their dissertations and theses under the tutelage of their supervisors based on prescribed university guidelines in an attempt to answer the following research question: *"How does Chapter 1 relate to other Chapters in a dissertation or thesis?"* A qualitative approach utilising an inductive content and thematic approach of analysis and interpretation of data was employed based on observations made because the study sought to develop a theory grounded in data gathered on the phenomenon under investigation[33][34].

A grounded theory design of inquiry was used to systematically gather and analyse data with the intention of developing a theory that would be used to understand the relationship of Chapter 1 to its subsequent Chapters in a dissertation or thesis[33][25].

The population of the study comprised different dissertations and theses from universities in the Faculty of Arts and Education, as attempts were made to understand and discover insights relevant to the phenomenon being investigated. University libraries were the major source of such documents, as they contain legitimate projects that have undergone rigorous and vigorous supervision before they are marked by internal and external Examiners. Thereafter, based on the recommendations of the Examiner, they are fine-tuned by the student before they are re-submitted to the parent university for archival purposes. This process makes the selected documents credible, authentic, accurate, and representative of their institutions[27]. Since the documents were in the public domain, access to these by the researcher was unrestricted[24].

Non-probability sampling methods involving purposive and theoretical techniques were employed for this study. Two dissertations and 2 theses utilising a qualitative and quantitative RM were purposively selected for analysis based on the core categories which were developed premised on the central phenomenon of the RP[35]. The established preconceived notions were used to analyse and compare other

projects selected continuously until theoretical saturation was achieved[33][35]. Theoretical saturation was realised when no other new insights or additional data emerged[36]. Resultantly, thirty projects (i.e., fifteen qualitative and fifteen quantitative) were sampled, comprising twenty dissertations and ten theses, for an in-depth study of the phenomenon within a period of three months. Master's projects were about 200 pages or less in length, whereas PhD ones were approximately 400 pages or less. The projects scrutinised ranged from 2018 to 2019. Complementing these documents were 5 theses Examination Reports and 4 defence workshop minutes. For that reason, the findings are particularised to the universities studied as opposed to generalisation, which is left to the reader to do in comparisons with other universities[37].

Document analysis was used to generate data for this study since it was a desktop research. According to [24], documents "are standardised artefacts" which can either be in print or electronic form and can be used to generate data, review, and evaluate it systematically. For this study, classical primary literature related to the phenomenon was reviewed intensively and extensively as guidance and depth were sought[6]. The data obtained from the two dissertations and two theses chosen for the trial run were analysed, compared, and enabled the researcher to establish the framework of analysis based on the core categories unearthed. The core categories were compared with the literature surveyed and later fine-tuned[33]. In that way, the document analysis protocol was developed[38]. The triangulation of data from literature sources and that gleaned from the projects studied made the instruments credible and dependable in the data generation process[37]. In keeping with ethical issues, a waiver was sought from the[4], as the study involved non-humans. Despite that, issues of confidentiality, privacy, and anonymity with regards to the documents used were observed. To focus the study on the major components of Chapter 1 in relation to the subsequent chapters, the following framework for the data generation process was constructed (see Table 1).

Chapters	Core Category
1.Introductory Chapter	1.1 Background to the study. 1.2 Clearly stated RP. 1.3 Stating specific Research Objectives (RO). 1.4 Deriving Research Sub-Problems (RSP) from RO. 1.5 Deriving Research Hypotheses (RH) from the RO or RSP. 1.6 Significance of the study. 1.7 Appropriateness of the paradigm which informs the RM in the preview. 1.8 Organisation of the study.
2.Review of Related Literature	2.1 Relevance of the Conceptual/Theoretical Framework. 2.2 Relevance of literature reviewed in addressing the RP. 2.3 Relation of literature surveyed to the Background of the study. 2.4 Relationship of the studies reviewed to RO, RSP, or RH and RP. 2.5 Reviewing similar studies meant to fine-tune the RP, RM, instruments, data analysis procedures, and justifying them.
3.Research Methodology	3.1 Elaborating the preview of the RM contained in Chapter 1. 3.2 Justification of the paradigm used to inform the RM to answer the RP. 3.3 Appropriateness of the approach used, informed by the paradigm chosen. 3.4 Revealing how variables in a quantitative research are going to be treated. 3.5 Demonstrating how the research methods, sampling method, data collection, and data analysis procedures are informed by the paradigm and approach used. 3.6 Demonstrating how the RP/RSP is resolved within the RM.
4.Data Presentation and Interpretation	4.1 Findings/results are presented guided by the RO, RSP, or RH. 4.2 Appropriateness of themes used to present data and explore the phenomenon as derived from RO or RSP in a qualitative study.

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Chapters	Core Category
	4.3 Appropriateness of reporting and analysing data in quantitative studies based on RSP or RH anchored on variables. 4.4 Literature surveyed used as evidence of data unearthed.
5.Summary, Findings, Discussion, Conclusions, and Recommendations	5.1 Discussion of findings/results centred on RO, RSP, or RH depending on the approach used. 5.2 Discussion achieves RO, answers the RSP, or confirms or disconfirms RH. 5.2 Literature surveyed in Chapter 1's background and 2 is either confirmed or disconfirmed. 5.3 Findings/results reflect the Conceptual/Theoretical Framework discussed either in Chapter 1 or 2. 5.4 Conclusions are drawn from literature surveyed in Chapter 2 and the empirical investigation conducted in Chapter 3, reported in Chapter 4, guided by the RO/RSP or themes. 5.5 Recommendations are based on the conclusions made and reflect on the significance of the study discussed in Chapter 1.

Table 1. Data generation framework for chapter 1 in relation to subsequent chapters

The interactive process used to analyse qualitative data captured combined elements of content and thematic analysis[38]. First, Chapter 1 of a selected project was thoroughly read. The data generated was then segmented and coded into core categories and subcategories based on the central phenomenon of the RP[38]. The other projects' first Chapters were scrutinised to establish the relationship between the categories identified and the phenomenon under investigation. Subsequent dissertations and theses were reviewed and evaluated against the predetermined categories, which enabled the researcher to gain deeper insights into the RP and develop empirical knowledge[39]. The empirical data were compared and contrasted, and emergent themes were used to fine-tune the core categories[24]. Similar patterns were clustered into themes, and dissimilar ones were interrogated further for clarification. Each theme, which

was grounded in the data gathered, was used as a unit for analysis (see Table 1) from which theory was generated[33][24].

Findings

The findings of the study are reported below based on the five traditional Chapters of a dissertation or thesis using the Framework of Analysis portrayed in Table 1.

Chapter 1: Introductory chapter

The scrutiny of the first Chapters of the different dissertations and theses was benchmarked on the core categories exhibited in Table 1. Generally, all postgraduate students were able to give their project a brief title and motivate the background to the study to establish the gap they intended to investigate, informed by both primary and secondary sources of literature reviewed (cf. 1.1). In the process, some students failed to link their desired RM, designs/methods, and instruments to those reviewed in similar studies (cf. 2.5). Furthermore, the review revealed that most students expressed their RP in non-ambiguous terms, either as a statement or a question (cf. 1.2). While experienced researchers advise students to use the latter[19], those students who expressed their RP in a statement failed to break it down into clearly stated researchable RSP (cf. 1.4). At worst, some RSP responded to “yes” or “no” questions, which signified the end of the research enterprise.

Interestingly, the majority of postgraduate students were able to express their research objectives (RO) in measurable terms. It is only 2 students out of the thirty investigated who used the term “develop” to express one of their ROs. The term was found to be inappropriate in cross-sectional studies, as development requires a longer period of time for it to be measured.

The major challenge revealed by the majority of postgraduate students, which had a bearing on subsequent Chapters, was their failure to craft their RO, RSP, and RH on a one-to-one correspondence so as to demonstrate their relationship and centrality to the whole research process (cf. 1.4; 1.5). For those who attempted to do so, the structure of their subsequent Chapters was predictable, together with the framework of analysis and interpretation of data (cf. 2.4; 3.6; 4.2; 4.3). Furthermore, the RO, RSP, and RH became the benchmark on which conclusions and recommendations of the study were drawn and made, respectively (cf. 5.2; 5.4).

Noteworthy were the significance of the study (cf. 1.6) and the preview of the RM (cf. 1.7) as highlighted in Chapter 1. The former impacted the recommendations (cf. 5.5) that were made, while the latter was

elaborated on in Chapter 3 (cf. 3.1). Supplementing this data was the organisation of the study (cf. 1.8), which gave the synopsis of the whole project, providing it with a gestalt view[4]. Debatable, though within this context, was whether RO should be in both methodologies, as revealed in most documents reviewed, since some researchers argue that RH may stand alone as they are considered the working tools of every quantitative study[1][30].

Chapter 2: Review of related literature

Although the majority of projects scrutinised had the Conceptual/Theoretical Framework in Chapter 2, some had it in Chapter 1. This difference was considered insignificant to this study, as its placement was determined by the various formats of autonomous academic bodies of various universities. Interestingly, in this context, the Conceptual Framework was associated with quantitative studies and the Theoretical one with qualitative studies, although one PhD student used both in his thesis. In the former, the students were able to identify and explain the relationship between the independent and dependent variables as expressed in their RP, which guided their study[7] (cf. 2.1). These were further broken down into measurable RH (cf. 2.4). In their explanation of the concepts, they demonstrated how the independent variable would affect the dependent one in their study, although they failed to relate the discussion to the studies reviewed (cf. 2.5).

On the contrary, those whose qualitative study was associated with the Theoretical Framework used, the majority of them were able to demonstrate how their study was embedded in the theory adopted and ably linked their RM to it with some justifications (cf. 2.1). Similarly, those who deviated from the RM reviewed in the theory as demanded by their RP did so with some justifications as well (cf. 2.5). However, the majority of them failed to reveal how their empirical investigation would contribute to the body of knowledge or practice based on the theory (or theories) adopted (cf. 2.2). Of concern in this context were those who attempted to align their study to more than one theory. One Master's student had four of these. The narration sounded disjointed and unrelated to the study, which left the reader in suspense, an observation that was also raised in one of the defence workshop minutes.

Generally, it was interesting to observe that most students were able to chart the body of knowledge needed to motivate their RP and establish the gap they intended to investigate using a variety of primary and secondary sources, some of which were current (cf. 2.2). Of concern, though, was that only a minority of them were able to show the link between the literature being surveyed and that reviewed in the background (cf. 2.3). Besides that observation, most of them are commended for ably giving their study a

theoretical framework based on the historical developments of their RP informed by the classical literature reviewed. Significantly lacking in their review was how the RM utilised in previous studies refined the RM they adopted (cf. 2.5).

Further scrutiny of the documents revealed that most postgraduate students attempted to centre their literature survey on the RP and its major components (RO, RSP, RH) or the themes derived from the RSP (cf. 2.4). Those who deviated from this norm had their reviews punctuated with irrelevancies (cf. 2.2), which attracted the following comment from one of the Examiners:

> *The candidate is commended for having reviewed a variety of primary and secondary sources for his study, with some of them being current. However, the candidate seems to have been overwhelmed by the amount of literature he had and lost focus in the process. Some chunks of literature reviewed were merely written for their own sake without critically examining them in relation to the research problem.*

Conspicuously missing too in most projects was how the Conceptual/Theoretical Framework was deepened by the literature surveyed[1][25][30].

Chapter 3: Research methodology

When the RM described in this Chapter was cross-checked against the preview (cf. 1.7), it was discovered that it was in sync with what had been proposed earlier on (cf. 3.1). Also, based on their social view of reality, through their RP, postgraduate students tried to demonstrate how the philosophical assumption they brought to the research arena informed their RM, designs/research methods, population and sampling methods, instruments, data collection, and data analysis procedures utilised for their study (cf. 3.2).

Confusions only arose when it came to the research instruments, sampling methods, and data analysis procedures utilised, which were not resonating with the RM adopted to resolve the RP. Some students used a closed-ended questionnaire to gather qualitative data, and others used non-probability sampling methods (i.e., purposive and convenience) to select respondents for a quantitative survey. Discrepancies were also observed when it came to data analysis. They revealed serious encroachment on paradigmatic assumptions informing their research enterprise. For example, uncertainty reigned on whether to use statistics or thematic data analysis techniques to analyse qualitative data. Some of them, despite having stated that they would use a thematic approach to analyse data in Chapter 1 (cf. 1.7) and Chapter 3 (cf. 3.3),

went ahead and presented their data in tables and graphic form before analysing it in Chapter 4 (cf. 4.2), which was not compatible with the RM chosen to address their RP. In a similar fashion, students who adopted a quantitative RM went on to present and analyse their data in text form, perhaps trying to avoid statistical packages that are compatible with a quantitative study for reasons best known to them. Based on these findings, the researcher surmised that students who demonstrated such weaknesses worked on their Chapters in isolation, not in relation to the other, as alluded to earlier on in the analogy of a thread. Informed by this view, the researcher was convinced that, had they revisited Chapter 3, such flaws would have been avoided. Such a scenario is worsened by a lack of thorough supervision or the supervisor's ignorance of the impact of paradigms on the research process. On a positive note, PhD students seemed to be conscious of these paradigmatic differences, which informed the RP and RM of their studies.

Chapter 4: Data presentation and interpretation

The documents reviewed revealed that most Master's students failed to demonstrate the relationship that exists among the RO, RSP, and RH (cf. 4.1) as they failed to link this to how they reported their findings/results (cf. 41). Commendable within this context were some students who used the qualitative RM and reported and interpreted their data guided by the themes derived from the RSP (cf. 4.2), while those who adopted the quantitative one were guided by the RSP and the RH (cf. 4.3). In the process, some evidence drawn from the literature surveyed (cf. 1.1; 2.2; 4.4) was used to support their findings/results (cf. 5.2). Problems only arose from those who were overwhelmed by the data at hand and whose RO was not in sync with the RSP or RH. On further scrutiny, it was discovered that these components were not their main focus on the research instruments developed to collect/generate data. The lack of interconnectedness between the way instruments were developed and data reported created tone contradictions between what the student intended to investigate through Chapter 1, literature surveyed, data analysis, and interpretation of the results/findings.

Chapter 5: Summary, findings, discussion, conclusions, and recommendations

The documents reviewed demonstrated that all Chapters converge in Chapter 5, directed by the RP, the RO, RSP, RH, and RM through summaries delineated (cf. 5.1). The findings/results of the empirical investigation were structured and organised centred on either the RO/RSP or themes derived from the RSP (cf. 5.1). These were either confirmed or disconfirmed using related literature reviewed, which controlled the investigation (cf. 5.2). In the process, the RO/RSP or themes became the benchmark upon which the postgraduate student's technical skills and findings/results were evaluated and effort

appreciated by the research community. However, some projects that were haphazardly structured had either the RO or RSP not addressed. Glaringly missing in most of the documents reviewed were conclusions drawn from the literature surveyed, which were supposed to be contrasted and compared with those derived from the empirical investigation (cf. 5.4). The few who were able to do so managed to identify the discrepancy and explained it within the context of their research endeavour. Ignored in most cases was a reflection on the Theoretical Framework, which was reviewed in Chapter 1 or 2 (cf. 5.3).

Further examination of the documents revealed that the majority of postgraduate students failed to state whether the RSP or RO were answered or achieved, respectively (cf. 5.2). Even some of the recommendations suggested were neither drawn from the conclusions of the research nor linked to the significance of the study (cf. 1.6; 5.5). Little wonder that one Master's student suggested 30 recommendations based on her empirical investigation, which was deemed not feasible when resources are factored in. Those not drawn from the conclusions of the study could not be linked to Chapters 1, 2, and 4.

Discussion

The examination of the relationship of Chapter 1 to its subsequent Chapters has revealed that Chapter 1 must completely outline the research process of the whole dissertation or thesis centred on the RP and its major components (RO, RSP, RH) with literature briefly used to frame the inquiry if the subsequent Chapters are to be predictable and controllable[39]. The brief historical overview embedded in it must attempt to answer the question on what is known about the phenomenon and what has created the problem[30]. In addition, the RM, which is elaborated in Chapter 3, must also be briefly highlighted in Chapter 1 as a way of equipping students with the prerequisite skills needed for the entire research process at the initial planning stages if they are to be empowered to proceed with subsequent Chapters independently or with little supervision.

Chapter 2 must provide the theoretical framework on which the research endeavour is grounded[30]. In a similar fashion, the RO, RSP, or themes/RH derived from the RSP must help the student build the related literature review in an incremental manner, section by section[39]. It must commence from a broader perspective and narrow down to the literature connected to the purpose of the study to give it relevance, guided by the RSP[25][39]. Similarly, the RM used in reviewed studies meant to address similar RP must be used to fine-tune the research approach, the research methods/designs, the instruments, and data

analysis procedures to be employed in the study. To minimise tensions when it comes to the presentation of findings/results, instruments used in the data collection/generation phase must be developed based on RO/RSP, RH, and the literature reviewed[39]. In the process, students must guard against paradigmatic encroachment.

When it comes to Chapter 4, the postgraduate student must re-read Chapter 1 and Chapter 2 so that the discussions of the findings/results are structured and organised based on the RSP or themes/RH and related to the literature reviewed. Likewise, when it comes to Chapter 5, the discussion and conclusions drawn must be sequenced in a thematic manner so that recommendations suggested are based on the themes or RSP and the significance of the study[30][39]. In that way, the symbiotic relationship that exists between Chapter 1 and its subsequent Chapters would have been demonstrated.

For postgraduate students to be able to demonstrate the technical skills needed in producing quality dissertations or theses as suggested in this study, they would need orientation and training[14]. In that way, some flaws highlighted in this study would be minimised or eliminated, particularly in the conceptualisation of Chapter 1, which sets the stage for the whole research process.

Conclusion

Lack of the symbiotic relationship that exists between Chapter 1 and its subsequent Chapters makes the research effort at the postgraduate level a daunting and frustrating task. Resultantly, some students have abandoned their academic pursuits due to the demands of the research enterprise at the Master's and PhD levels, which becomes costly in terms of time and resources they would have invested. Others fear to venture into this enterprise. Challenges or fears envisaged at this level, whether real or imagined, would be minimised if not eliminated if postgraduate students were oriented to meticulously conceptualise Chapter 1 based on its RP and major components informed by one's ontological and epistemological assumptions brought to the research arena, which in turn have a bearing on the RM, research methods/designs, instruments, data analysis and interpretation, conclusions drawn, and recommendations made. Such an approach would not only enhance the quality of the research output at this level but also produce students who are research-minded and armed with the prerequisite and technical skills needed in the research endeavour.

Statements and Declarations

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Conflict of interests

The author has no competing interests to declare that are relevant to the content of the article.

Author's contribution

This is my original work of an empirical investigation which I worked on independently. Sources of ideas have been acknowledged using the appropriate style.

Data availability

After approval and publication, the work will be available in the public domain for other scholars to use or critique.

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