

Constructing the Conceptual Framework among 21st Century Postgraduate Students: Thesis Supervisors' Perceptions

Pembentukan Kerangka Konsep dalam Kalangan Pelajar Pasca Siswazah Abad ke-21: Persepsi Penyelia Tesis

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Abstract: Constructing a conceptual framework has always been a problem for many postgraduate students. Even though the students are now exposed to many different tools, applications, 21st-century skills and are guided through the process of conducting research, many still need help to produce a conceptual framework to conduct postgraduate research. A robust conceptual framework is the output of a thorough literature review. The construction of a conceptual framework involves multiple research skills. To meet the requirements of a thesis and ensure completion, supervisors are always emphasizing the application of research skills as well as finding the best practices while addressing challenges of guiding their students through the process of constructing a conceptual framework. In order to facilitate the process, the supervisors must first obtain a clearer picture of the extent of their students' understanding of the conceptual framework and how they construct the conceptual framework from the literature review. This knowledge is important for supervisors wanting to ensure that novice researchers achieve the desired level of competency. This study aims to investigate supervisors' perceptions, based on their experiences of guiding their postgraduate students through the process of constructing a conceptual framework. A qualitative approach, using an interview schedule, was employed to collect data from three experienced supervisors. They provided feedback on their experiences of supervision, specifically, their experiences of supervising postgraduate students and helping them construct the conceptual framework. The findings showed that their postgraduate students encountered problems in reviewing literature critically and they had little understanding of conceptual frameworks. However, the supervisors revealed that these difficulties could be resolved by providing clear directions and fully engaging the students, to prompt them to think critically and flexibly in order to produce a solid conceptual framework for their research. Insights into the particular aspects of the development of skills in constructing conceptual frameworks among postgraduate students are also provided.

Keywords: Conceptual framework, literature review, flexible, supervisors' perceptions

Abstrak: Pembinaan kerangka konsep merupakan salah satu masalah yang dihadapi oleh pelajar pasca siswazah. Walaupun mereka telah didedahkan kepada pelbagai jenis cara serta panduan kemahiran abad ke 21 yang berkaitan di sepanjang proses pengendalian kajian, ramai di antara mereka masih memerlukan bantuan untuk menghasilkan kerangka konsep bagi mengendalikan kajian. Kerangka konsep merupakan hasil penulisan daripada tinjauan literatur. Pembinaan kerangka konsep melibatkan pelbagai kemahiran kajian. Untuk membolehkan pelajar melengkapkan tesis dan melengkapkan pengajian, penyelia selalu menekankan penggunaan kemahiran ini dan mencari cara penyelesaian yang bagus semasa menandatangani cabaran dalam membantu mereka dalam membina kerangka konsep. Untuk membantu mereka,

penyelia haruslah terlebih dahulu memahami setakat mana pemahaman mereka tentang kerangka konsep dan bagaimana mereka membinanya dari tinjauan literatur. Pengetahuan ini penting untuk memastikan mereka mencapai tahap kompetensi tersebut. Kajian ini bertujuan memahami persepsi tentang pengalaman penyelia dalam membantu pelajar-pelajar membina kerangka konsep. Kaedah kualitatif melalui temu bual telah digunakan untuk kutipan data dari tiga penyelia yang berpengalaman. Mereka telah memberikan maklumat tentang pengalaman dalam penyeliaan dan cara membantu pelajar-pelajar berkenaan untuk membina kerangka konsep. Dapatan kajian menunjukkan bahawa pelajar-pelajar menghadapi masalah pengendalian penulisan tinjauan literatur secara kritikal. Namun begitu, penyelia dapati bahawa masalah ini dapat diselesaikan dengan memberikan panduan yang jelas dan melibatkan mereka dengan sepenuhnya, membolehkan mereka memikir secara kritikal dan fleksibel, supaya dapat menghasilkan satu kerangka konsep yang mantap. Kajian ini memberikan gambaran untuk aspek perkembangan kemahiran dalam pembinaan kerangka konsep dalam kalangan pelajar pasca siswazah.

Kata kunci: Kerangka konsep, tinjauan kajian, fleksibel, persepsi penyelia

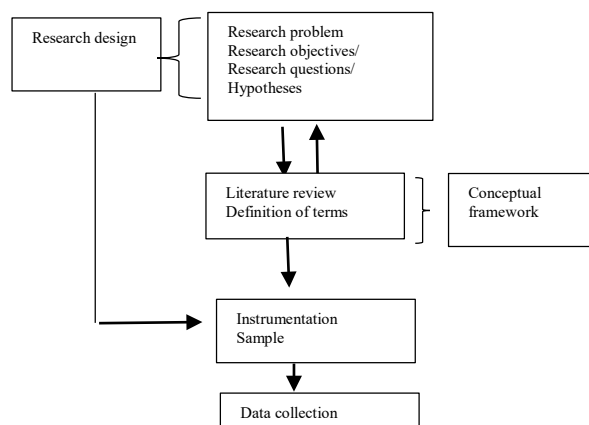
Introduction

In recent years, much attention has turned towards postgraduate supervision and students’ performance as they provide indicators of research progress and output, which in turn will contribute to the prestige of institutions. More and more students are now driven to pursue postgraduate studies to acquire 21st century skills, upskill and improve employment opportunities. However, it has been observed that the process of conducting and completing a research study is fraught with challenges for many postgraduate students, particularly among those who embark on postgraduate studies with little preparation research work (Bakhou & Bouhania, 2020). It is therefore hardly surprising that these students struggle to complete their studies in the time given, in the face of the many real difficulties faced, for example, getting started on a viable research topic or formulating research questions, doing the literature review or choosing the best research design. As such, it is vital for supervisors to appreciate their students’ difficulties so that they will be able to provide the support necessary for them to complete the postgraduate programs (Ajjawi, Dracup, Zacharias, Bennett & Boud, 2020). Thus, there is a need for supervisors to determine the challenges postgraduate students face at every stage of the postgraduate research journey and provide the environment in which their students can thrive. Research has found that at the initial stage, difficulties invariably relate to the research problem. Even though a study begins with the research problem, novice researchers are not able to identify and describe important aspects of the research problem to demonstrate that a problem exists and is worthy of investigation. Besides, research has also revealed that

students suffer from low confidence to work on their studies conceptually (Kivunja, 2018; Reason & Bradbury, 2005; Hoon, Narayanan & Sidhu, 2019). Despite being made aware of the importance of the literature review in the construction of a theoretical and conceptual framework to guide a study, it is apparent that students still face challenges in building a conceptual framework at the early stage of their research. Considering the scarcity of research that examines difficulties relating to the construction of conceptual frameworks, this study aims to investigate supervisors’ experiences of guiding postgraduate students through the process of constructing a conceptual framework, using the following research questions:

Research question one: What are the challenges of teaching or guiding 21st century postgraduate students in helping them to understand and construct a relevant conceptual framework?

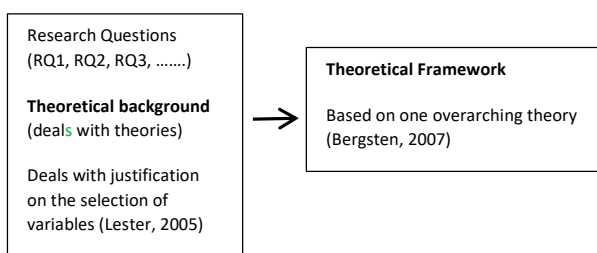
Figure 1: Research process



In research, it is not uncommon for ideas to undergo cycles of refinement and revision prompted by the researcher’s in-depth reading, experiences, perceptions and reflections. Hence, constructing a conceptual framework is a painstaking process, often beginning with a small idea. Further development of this idea into a research problem worthy of investigation will require a comprehensive literature review. In the initial stages of research, the literature review provides related input to clarify ideas which are further developed till the end of the research following the rigours of the scientific method to illuminate concepts through justification, analysis of the ideas and building on previous studies in the field. Hence, a systematic literature review helps to establish the theoretical roots of a study and satisfies the demands of scientific research methods. Hence, a strong literature review will enable the researcher to produce the conceptual framework to steer the whole research activity. Sekaran (2003) asserts that conceptual framework is a required component in research as it discusses and justifies important theories related to a specific study. A good conceptual framework is therefore an essential research tool to contextualize, define the research problem, formulate the research objectives and create a robust research design (McGaghie, Bordage & Shea, 2001).

However, it has been observed that students are not able to discern the applications of conceptual models and theoretical models and their roles in research. Lester (2005) clarifies that the selection and justification of variables come from a thorough understanding of theories. This view is further illuminated by Bergsten (2007), emphasizing that a theoretical framework is built on an overarching theory which informs the objectives, questions, methodology, data analysis, conclusions, and implications of the study. Figure 2 illustrates the roles of theories in research for formulating research questions.

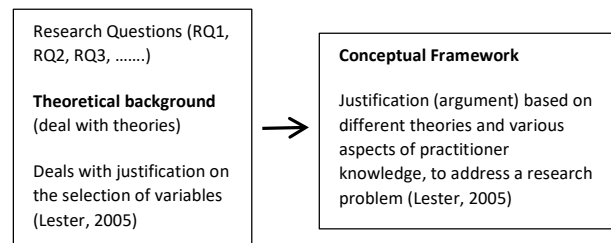
Figure 2: The roles of theories in a theoretical framework



On the other hand, a conceptual framework guides the design of the research to answer the research questions. Both theoretical and conceptual frameworks comprise theories. The former discusses the theories,

while the latter structures and links the theories to inform the construction of the research design. Figure 3 shows the application of theories in the research questions in the conceptual framework which provides the scaffolding for the study. Hence, the theoretical framework resides within the conceptual framework as highlighted by Ravirch and Riggan (2017).

Figure 3: The contribution of theories to a conceptual framework



The understanding and description of concepts are also broken down into key words, phrases for a class of objects associated with particular theories (Blaikie, 2000). Hence, theories work within concepts. Ngulube, Mathipa & Gumbo (2015) assert that theories form the bedrock of a conceptual framework. A researcher can construct a conceptual framework by first understanding the supporting theories. This way of working is practiced deductively. It works inductively when a qualitative study is conducted. In this case, a researcher directly refers to the existing research findings with complete models and hence conceptually draws conclusions based on theories or supports the theories.

While all school subjects and university courses aim to develop innovative skills among students as listed in 21st century educational plans, postgraduate students who need to apply these skills, particularly at advanced levels of scholarship, need to surmount difficulties to complete a postgraduate study (Samanhudi, & Linse, 2019). Strategies that develop 21st century skills such as flexibility, adaptability and critical thinking would help them to develop and produce quality work (Wrahatnolo & Munoto, 2018). Mastery of these strategies will enable them to function flexibly in different situations using content knowledge (Ananiadou & Claro, 2009). Hence, it is important that postgraduate students develop these advanced critical thinking skills which will not only enable them to excel in their research work but also in their careers. Conducting a robust literature review will help them refine their reasoning or critical thinking skills (Indah, 2017; Muamaroh et al., 2020).

Methodology

This study employed a qualitative method to collect data to answer the research questions on the challenges of getting students to understand and construct a relevant conceptual framework, the extent to which postgraduate students understand their conceptual frameworks and the best practices of guiding the students in constructing a relevant conceptual framework. Purposive sampling was employed to collect data which were collected through in-depth interviews with three supervisors who were supervisors of postgraduate students in three universities in Malaysia. They were selected based on two main criteria, based on their fields of expertise and experience of supervising postgraduate students. Firstly, they were supervisors from three different universities, with expertise in science-technology (such as engineering), humanities (such as marketing), and a multidisciplinary field (such as science education) respectively. Secondly, they had at least 5 years of supervision experience. A semi structured interview schedule and protocol, based on the key words in the research questions, was employed to facilitate probing of interview answers. The interviews were conducted over the phone and on online google meet. Each interview lasted 25 to 30 minutes and provided insights into their experiences of supervising and guiding students through the process of constructing conceptual frameworks for postgraduate research. The interview data were transcribed and analyzed based on codes derived from the research questions.

Results

The findings were derived from a careful analysis of the data obtained from interviewees identified as R1, R2 and R3. The R1 and R2 were supervisors from private universities and the R3 was from a public university. The results are presented and discussed with reference to the following research questions:

Research question one: What are the challenges of teaching or guiding 21st century postgraduate students in helping them to understand and construct a relevant conceptual framework?

All three supervisors revealed that their postgraduate students were not ready and well-prepared when they enrolled in the program. They did not have a clear picture on constructing theoretical and conceptual frameworks due to reasons such as little engagement in research methodology classes or seminars. R3 found that most of the postgraduate students had job commitments and were therefore unable to spend much time on their research. Even when they were able to attend classes, they did not use the opportunity to communicate and interact

in the classes, possibly attributed to insufficient preparation for class engagement and different work ethics. The supervisor, R3, pointed out:

..students are really too busy to communicate.....this even worse for student come from other country, the communication tool is also a problem.....(sic)

It was also apparent that the students did not read enough, from the lack of awareness of the importance of theoretical and conceptual frameworks. Another supervisor, R2 further explained that her students did not have exposure to the roles of theoretical and conceptual framework in research. The supervisor R3 concurred, highlighting the difficulties of supervision, saying,

“Challenges are that students are not exposed much to the importance of theoretical and research conception framework in their pre-requisite classes for PG studies. The research classes should emphasis more on this aspect, which is important for various type of research....” (sic)

Interestingly, R1 also explained that the students were reluctant to read reports of primary and secondary research conducted, as can be inferred from their literature reviews which drew attention to the lack of scholarship, reflection and critical thinking expected of research conducted at postgraduate levels. The superficiality of knowledge displayed by the postgraduate students meant that students had little to draw on, and even less input for the demands of producing the conceptual framework for their research. Therefore, the supervisors found it immensely challenging to guide them through the process of producing a conceptual framework for their research. It was clear that the postgraduate students had not understood the scale and depth of reading needed for a robust literature review to inform the construction of a conceptual framework to address the research problem. It was also obvious that little thought had been given to the research problem. In fact, one of the supervisors, R1, stated:

“They need to prioritize the research problem, and this will eventually lead them to construct a strong conceptual framework. Students are reluctant to do literature review and draw inferences from other studies...” (sic)

R1 revealed that the most challenging aspect of guiding 21st century postgraduate students unprepared for rigorous research work, was to get them to read critically. She said that students were able to obtain many articles but pointed out that they needed to be able to go beyond basic comprehension. She lamented that the postgraduate

students lacked the ability to read critically, for example, examine evidence and arguments, assess relevance, identify gaps, raise questions about previous studies, relevance of theoretical frameworks, methodologies used, data analysis and interpretation of findings. It was also apparent that the students were not able to weave information into a coherent whole:

R1: “ ...They need to do critical reading...When read article need to able to synthesize the idea...” (sic)

Research question two: To what extent do postgraduate students understand their conceptual frameworks?

As revealed in the answers to Research question one, all the three respondents repeatedly highlighted that their students did not have firm conceptual frameworks for their research. Again, frequent changes to the framework could be attributed to lack of clarity or direction in the research. In the words of R2,

“They always have confusion in constructing their conceptual framework. Their framework may change... resulted some refinement in their studies. So some flexibility should be allowed for improvement of their research conception. Students themselves have to be systematic, and clear. They normally will keep changing their framework too if they are not solidly clear and understand their theoretical perspective of research.” (sic)

Another supervisor, R1 found that her students were aware of theories but expressed her exasperation that the students were not able to extract and synthesize concepts from the theories to use in their own conceptual frameworks. They were unable to appreciate the importance of the conceptual framework to their research. It was clear that their students were still processing information at basic cognitive levels of the Bloom’s taxonomy. She said,

“Theory wise they can very good...but how they take the concepts from those theories and construct conceptual framework that is something testing the model right...the ability to link the conceptual model is challenging...they need a lot of help... this is the most challenging...Conceptual framework is unique component of research...they really need to understand”

She also revealed that students’ conceptual frameworks were repeatedly changed, suggesting that

they lacked clarity, being uncertain of theories which could be used in their own work. Translating theory into practice appeared to be a major challenge among the students, and this could be attributed to the lack of understanding of theories and their own conceptual frameworks and this difficulty was exacerbated by the lack of critical writing skills crucial for academic work. Their written work drew attention to their inability to make connections among important dimensions. Supervisors R1 and R3 were disappointed that their postgraduate students had limited cognitive abilities to construct new knowledge, as could be seen from their reviews of literature. It was apparent that their critical thinking and writing skills were inadequate to meet the demands of postgraduate research. R1’s comments showed that the students needed much guidance:

“... they need support on how to relate the concepts together in building the conceptual framework...”

R3’s comments implied that cognitively, her student needed to develop higher order skills:

“...I can see she had idea on the proposal, but she doesn't link them together...”

Research question three: What are the best practices of guiding the students in constructing a relevant conceptual framework?

The first two research questions led to the question on the kind of interventions supervisors would need to provide to help students build the conceptual framework. R1 and R3 reported that they spent a lot of time guiding their students through the process of constructing their conceptual frameworks. However, they felt that much more needed to be done by the students themselves, in particular, on reading extensively to equip themselves with the requisite knowledge. R2 highlighted that students needed to take the initiative to scrutinize theoretical and conceptual frameworks from previous research conducted, so that the students could learn from good examples of writing to develop and refine their own thinking writing skills. The following is the revelation provided by R2:

“I would say that the first step is to get the student to read some good model research journal papers especially those papers with theoretical perspective and research framework.” (sic)

The comment suggests that insufficient reading in the area of research had been done, and postgraduate students need to much better acquainted with influential works to inform their own conceptual thinking. It was

clear that this perspective was shared by another interviewee, R3:

So far, I think asking students to study on those good article or journal or thesis is the best way to help students construct conceptual framework. (sic)

These comments indicate that both supervisor and students need to work more closely together, and supervisors need to provide clear directions on the literature to read, on managing the literature review through close, analytical and critical reading of important and relevant works, for example, prompting their students to see links, organize and build their own conceptual frameworks for the research. Interestingly, R1 recommended that supervisors should see their supervisees as learning partners in the research for meaningful engagement and encourage much more input from their supervisees during consultations. It was emphasized that the students would need to take more responsibility for the construction of knowledge and be ready for exchanges of ideas in meetings with the supervisors. R1 maintained:

“For 21st century students, I always consider they are a learning partner because construction of knowledge is a learning process between supervisor and supervisee...the whole practice can be very successful if never see student as a student but give them responsibility to bring knowledge and discussion” (sic)

These comments suggest that there needs to be more clarity on the roles of the supervisors and supervisees, and a code of practice for research students and supervisors though often available to parties involved, needs to be strictly observed. The respective roles are always clearly defined, but perhaps need to be emphasized at every supervision meeting to ensure that real learning takes place.

Discussion and Conclusion

Referring to the three research questions, the supervisors' comments showed that students faced challenges in constructing the conceptual frameworks, and these difficulties could be attributed to students' lack of skills, knowledge and scholarship, which are needed at the highest levels of learning. The postgraduate students do not seem to be aware of the importance of acquiring 21st century skills (Ananiadou & Claro, 2009; Wrahatnolo & Munoto, 2018) needed for conducting a study. They need critical skills such as self-management, critical thinking,

flexibility and adaptability to produce innovative ideas in creating a conceptual framework from a robust review of literature review. Besides, they also need to have good academic writing skills. Lack of the essential skills for research at the highest levels has made supervision challenging. This finding has validated the findings of recent research done (Samanhudi & Linse, 2019).

The supervisors also reached consensus on the importance of producing a robust literature review since one of the key competencies required for research is the ability to apply tacit knowledge and that from theories and reconceptualize know to create new knowledge. On top of this, the supervisors also believed that it is essential for both supervisor and student to work closely and collaboratively in producing the conceptual frameworks for research. A few ways for the students were proposed to improve students' skills in constructing conceptual framework, such as learning from examples by referring to previous research and doing more critical reading, but directions need to be provided by the supervisors. These suggestions echo the views of Binkley et al. (2012) that institutions have responsibilities to help students to develop the 21st century skills. It was found that postgraduate students would need to work systematically and critically when reviewing literature. All three interviewees concurred that the development of conceptual knowledge depends heavily on extensive reading and critical analyses of relevant literature. It is acknowledged that in producing a thesis, students face many challenges. Researchers, for example, Bitchener & Basturkmen (2006), Ho (2013) and Shaw (1991) have highlighted students' difficulties in different chapters of their theses, but all the work requires students to possess competencies in conceptualizing the literature review and writing effectively. Christmals, & Gross (2017) also highlight the importance of the literature review and provide useful guidelines to construct the initial research framework through writing a literature review.

The findings obtained by the present study, albeit using a very small sample of three experienced postgraduate supervisors, are compatible with the findings of studies done on the importance of drawing insights from research done to construct a solid conceptual framework (Reason & Bradbury, 2005). Studies have also found that failure to complete studies on time was attributed to weaknesses in methodology, data analyses and reporting of results (Brockbank & McGill, 2007; Reason & Bradbury, 2005). Invariably, these problems stem from insufficient critical reading. These findings underline the importance of extensive reading in the field, as it will inform researchers on approaches to research designs, issues of reliability and validity, data analyses, interpretation, and reporting of results.

Exposure to the works of other researchers, through critical reading will therefore be extremely helpful to students conducting research at postgraduate levels.

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