

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Overview

This chapter elaborates on the research design, research methodology, and strategy to ensure legitimation of mixed study. It is also justifying the rationale behind the research methodology used and to point out on how this research was carried out. Furthermore, this chapter explains the data collection and analysis procedures that has been done in this study. Thus, further explanation in this chapter outlines the procedures and steps taken in gathering, analysing, ensuring, and validating the data. Subsection 3.2 of this study highlighted the design of this research which elaborates thoroughly about the chosen methodology, philosophical and merits, explained the exploratory sequential mixed methods design, and justify the use of nested sequential sampling design. Subsection 3.3 together with subsection 3.4 interpreted and described the procedures to collect and analyse the data. After that, subsection 3.5 expounded on how the results being presented, and followed by the strategies taken to ensure legitimation of mixed study in subsection 3.6 of the study.

3.2 Research Design

Research designs are types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research study (Creswell & Creswell, 2018; Johnson & Christensen, 2014). Meanwhile, Denzin and Lincoln (2018) refer it as strategies of inquiry. Furthermore, Wright, O'Brien, Nimmon, Law, and Mylopoulos (2016) explicate the key to quality research design is relying on the alignment of the researcher's worldview (i.e., ontology and epistemology) with methodology (research approach) and methods (specific data collection, analysis, and interpretation tools).

As for this research, the researcher has applied qualitative research design throughout the study. This is due to its flexibility and emergent in nature as expounded by Maxwell (2013) as follows:

“Thus, to design a qualitative study, you can’t just develop (or borrow) a logical strategy in advance and then implement it faithfully. You need, to a substantial extent, to construct and reconstruct your research design, and this is a major rationale for my design model. Qualitative research design, to a much greater extent than quantitative research, is a “do-it-yourself” rather than an “off-the-shelf” process, one that involve “tacking” back and forth between the different components of the design, assessing their implications for one another. It does not begin from a predetermined starting point or proceed through a fixed sequence of steps, but involves interconnection and interaction among the different design components.” (Maxwell, 2013, p. 13)

Based on his description above, it can be understood that qualitative research design is not only flexible and emergent in nature, but also typically non-linear and non-sequential in their operationalization. The parameters of the scope of the study and information gathering methods and processes are often flexible and evolving. Hence, most qualitative designs are not as structured and sequential as quantitative designs.

3.2.1 Philosophical View of Qualitative Research

Qualitative research is a type of research that explores and provides deeper insights into real-world problems (Moser & Korstjens, 2017). Numbers of qualitative methodologists including Lincoln, Lynham, and Guba (2011), Creswell (2007, 2016), and Creswell and Creswell (2018) have listed four types of philosophy from which the qualitative researchers might choose in conducting their research: post-positivism, critical theory, constructivism, and participatory.

In this research, the researcher will use constructivist worldview in conducting qualitative research throughout this study. This is because in this study, the researcher does not “find” knowledge, instead they construct it. In this context, Creswell (2007) had pointed out as follows:

“In this worldview, individuals seek understanding of the world in which they live and work. They develop subjective meanings of their experiences ... These meanings are varied and multiple, leading the researcher to look for the complexity of views ... Often these subjective meanings are negotiated socially and historically. In other words, they are not simply

imprinted on individuals but are formed through interaction 'with others (hence social constructivism) and through historical and cultural norms that operate in individuals' lives. Rather than starting with a theory (as in postpositivism), inquirers generate or inductively develop a theory or pattern of meaning.' (Creswell, 2007, pp. 20-21)

The researcher in this study has applied constructivist or interpretive worldview because he feels that each individual holds different views, and it is his role to uncover these multiple views. Instead of collecting numerical data points, intervene or introduce treatments just like in quantitative research, the researcher has generated hypotheses as well as further investigate and understand the quantitative data collected (Merriam, 2009). The researcher has go out to sites or settings to collect and gather data from the documents relevant for the study (Creswell, 2016). The data collected has answered the hows and whys instead of how many or how much (Tenny, Brannan, Brannan, & Sharts-Hopko, 2020).

3.2.2 Merits and Rationales for Using Qualitative Study

The main objective of this study is to develop an instrument. The intended instrument is referring to the Fiqh Forensic module for the Malaysian Syariah officers. The construction and utilization of self-report instruments is often considered a 'quantitative' endeavour (Al-Muallem, Elzubeir, Roberts, & Magzoub, 2016). However, it is the fact that adding qualitative approaches to instrument design and development should enable instrument developers to build stronger validity (Al-Muallem et al., 2016). Besides that, rigorous methods are needed to meet the objectives of the study especially when it involves the construction of an instrument (Al-Muallem et al., 2016; Caro-Bautista et al., 2015; E. Thomas, 2011). This is because many aspects need to be given detailed attention in the construction of an instrument including the need to build such instrument, the important components required in that instrument, and the context of debate and discussion in the instrument.

With this regards, the researcher believed that qualitative study is considered as the rigorous method in developing the Fiqh Forensic module for the Malaysian Syariah officers. The choice of qualitative research for this study is made based on numbers of reasons.

First, qualitative research approach produces the thick (detailed) description of participants' feelings, opinions, and experiences; and interprets the meanings of their actions (Denzin, 2001; Tenny et al., 2020).

Second, qualitative research is an interdisciplinary field which encompasses a wider range of epistemological viewpoints, research methods, and interpretive techniques of understanding human experiences (Denzin & Lincoln, 2002).

Third, the qualitative research admits the researchers to discover the participants' inner experience, and to figure out how meanings are shaped through and in culture (Corbin & Strauss, 2014).

Last but not least, qualitative research methods such as semi-structured interviews and documents are most commonly used for collecting data (Cohen, Manion, & Morrison, 2018).

In this research, the researcher used qualitative method to gather vital and important information for developing the Fiqh Forensic module and its components. During the data collection, the researcher interacts with the documents directly either by went to the USIM's library, bookstore, or online access to the online databases. Consequently, data collection is subjective and detailed.

The second rationale is related to the expansion intent. In the instant research, the researcher is intended to broaden the inquiry horizon. Different methods will be used for different inquiry. The qualitative methods will be applied to determine the need to develop a specific module related to the implementation of forensic science in Syariah courts, and also to determine the components and information that need to be included in the module.

3.2.3 Sidek's Module Development Model

As previously stated in chapter 1.7, there were several models for module development have been developed and introduced by researchers (Alsagoff, 1981; Branch, 2009; Dick & Carey, 1996; Noah & Ahmad, 2019; Rusell, 1974).

This study selected the model developed and introduced by Noah and Ahmad (2019) for several reasons, *inter alia*, this model is adjustable in nature that can be utilized in various types of disciplines. When it is not specific to a particular discipline, it can provide an opportunity for many disciplines to use this model in building the desired module. Furthermore, this model is flexible and can be used in

any of the following 3 situations: First, build a complete draft of the new module; Second, test and evaluate existing modules; Third, produce complete high-quality modules and ready to use.

The researcher has taken part in two series of courses on module development based on Noah and Ahmad's model. The first course came on February 9th, 2019 at Universiti Kebangsaan Malaysia. The Professional Postgraduate Workshop Center, in collaboration with the UKM Faculty of Education Graduate Association, was organising this course. Prof. Dr. Sidek Mohd Noah, the founder of the module development model, led this course. The second session was held on October 12-13, 2019 at the JKM Meeting Room, College 9 & 10, Universiti Teknologi Malaysia, Skudai. JKM Kolej 9 & 10 UTM Skudai was organising this second course. Dr. Mohd Izwan Mahmud, a lecturer from UKM's Faculty of Education, was the course's moderator. This second course also focuses on module development utilising the Noah and Ahmad model. This is done on the researcher's initiative and with the research supervisors' support and recommendations to develop the Fiqh Forensic module. In the Appendix F, the researcher has attached proof of participation in both courses.

Qualitative research design is integrated with the Sidek's module development model. This model has been widely used and applied in module studies at the postgraduate level as well as research studies in Malaysia. As in postgraduate study, numbers of master degree and philosophical doctorate candidates has adapted and adopt this model into their research design (Alias, 2012; Arsad, 2013). Figure 10 below illustrated the operational framework designed by him.

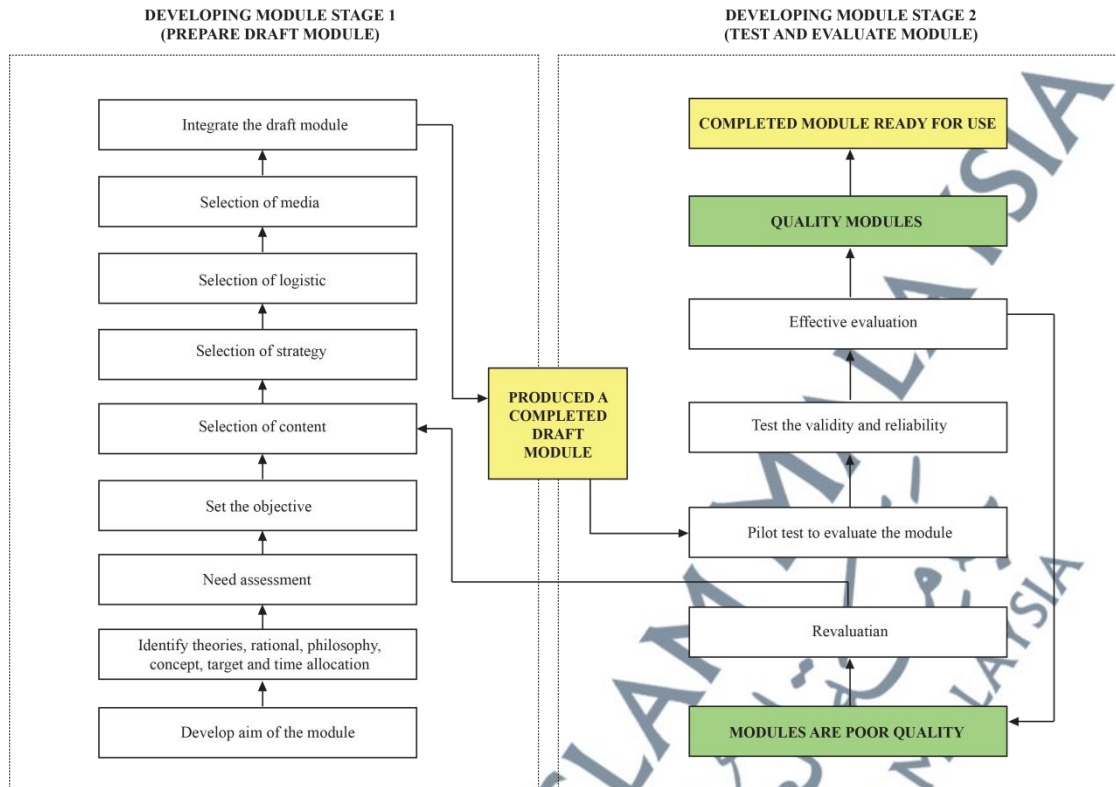


Figure 10: Sidek's Module Development Model

This model has two main stages - the draft module development stage (Stage 1) and the module testing stage (Stage 2). As for this study, only Stage 1 will be applied. Stage 1 involves the drafting of the Fiqh Forensic Fundamental Module. In this stage, the draft will be constructed by using qualitative methods. Data will be collected using a number of methods such as interviews and document analysis. Then, the collected data will be analysed using the content analysis method. This stage contains six steps needed to build a draft module namely goal building, identify theory, rationale, philosophy, concept, target, and time frame, need analysis, setting objectives, selection of content, strategy, logistic, and media used, and lastly compiling draft module.

Qualitative methodology for data collection and data analysis will be integrated within two components of the Sidek's module development model, which are "Need Analysis" and "Selection of Content". This can be illustrated on Figure 11 below:

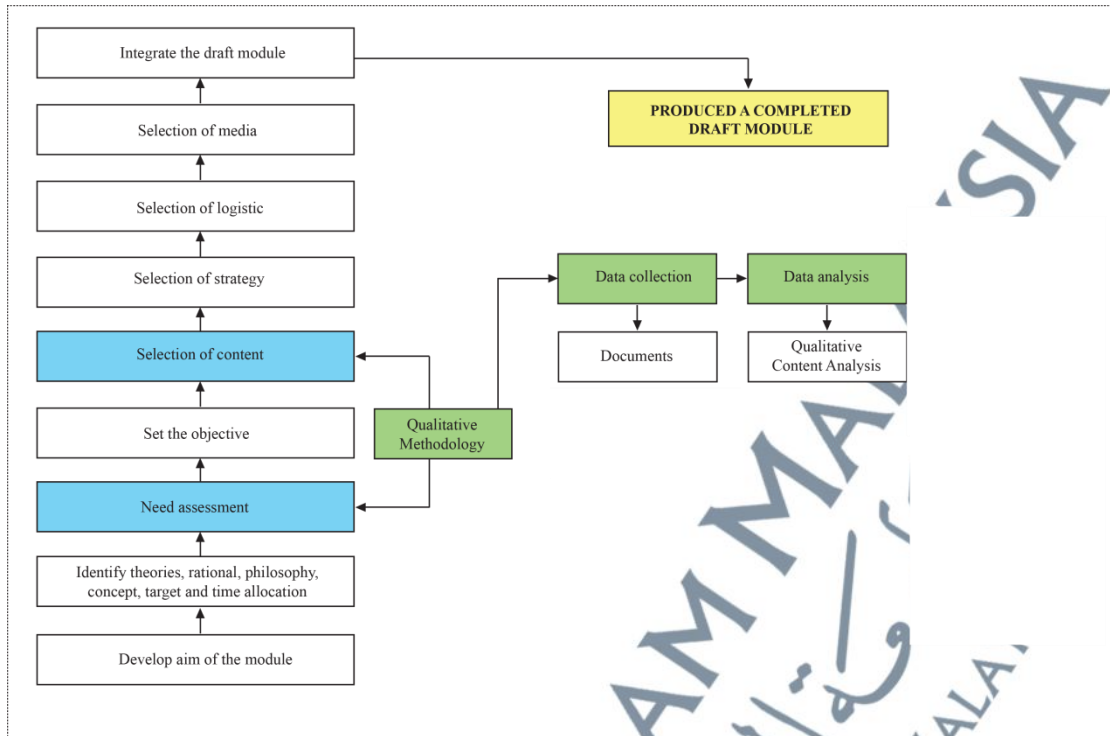


Figure 11: Integration of Qualitative Methodology within Sidek's Module Development Model

This integration is done to determine the existence of the need to build a Fiqh Forensic module for the use of Syariah Officers in Malaysian Syariah legal institutions. In addition, it is also implemented to determine and select the matters that need to be included in the module and made them as the contents.

The overview of this research design is shown in Table 10 below, which includes the stages of the research, the means of data collection and its sources, the approaches and results of the data analysis, and the measures used to maintain the study's trustworthiness. This study included three stages of analysis, which employed document and qualitative content analysis methodologies for data collection and analysis. Data were sourced differently based on their stages, which required a distinct data gathering strategy to reach the sources. Each step yields distinct findings, which indicate the three objectives to be fulfilled.

Table 10: Overview of Research Methodology

	Stage 1	Stage 2	Stage 3
Research Design	Qualitative Research Design + Sidek's Module Development Model		
Data Sources	Primary and secondary data on the need to built Fiqh Forensic Module	Primary and secondary data on the module's contents	Build the module based on the Sidek's model
Data Collection Method	Documents		
Data Analysis Method	Qualitative Content Analysis		
Data Analysis Approach and the Result	Approach: Descriptive and inductive	Approach: Descriptive and inductive	Approach: Descriptive and inductive
	Result: Determined 10 variables lead to the need to build a Fiqh Forensic module	Result: Determined the module's content	Result: Developed a completed draft of the Fiqh Forensic module
Ensuring Trustworthiness of Findings	Strategies: Triangulation; Multiple data sources; Respondent validation; Peer review and frequent debriefing		

3.3 Qualitative Data Collection

In this study, qualitative data collection methods will be used on two components in Sidek's development model, namely "Need Analysis" and "Selection of Content". The researcher has applied documents as a method to collect data in this qualitative study. The term 'documents can refer to more than just paper, and can include photographs, works of art, and even television programs (Merriam, 2009; O'leary, 2004). The nature of documents can be primary or secondary; it depends on the source of the document being obtained. If the document is collected afresh for the first time and original in character, then it is primary document taken from primary source.

Meanwhile, when the document is collected by someone else and which have already been passed through the statistical or analytical process, then it is secondary document taken from secondary source. In this study, both types of documents will be

used in collecting relevant data. Among the primary documents that been used are the Quranic verses, Prophetic traditions, legal statutes, and case reports. As for the secondary documents, it consisted of related textbooks, and journal articles related to civil evidence law, Islamic law, Malaysian Syariah law, and forensic science.

Merriam (2009) once noted that using documentary material as data is not much different from using interviews or observations. In fact, Glaser and Strauss (2006) have made it clear on the following statements:

“There are some striking similarities-sometimes obvious although often overlooked-between field work and library research. When someone stands in the library stacks, he is, metaphorically, surrounded by voices begging to be heard. Every book, every magazine article, represents at least one person who is equivalent to the anthropologist's informant or the sociologist's interviewee. In those publications, people converse, announce positions, argue with a range of eloquence, and describe events or scenes in ways. Entirely comparable to what is seen and heard during field work. The researcher needs only to discover the voices in the library to release them for his analytic use.” (Glaser & Strauss, 2006, p. 163)

Moreover, Bowen (2009) has elucidated that document analysis is a form of qualitative research, where documents are interpreted by the researcher to give voice and meaning around an assessment topic. Furthermore, analysing documents incorporates coding content into themes similar to how focus group or interview transcripts are analysed (Bowen, 2009; Merriam, 2009). Its primary purpose is to educationally evaluate particular written documents (Payne & Payne, 2004; Walsh, 2014).

The researcher decided to apply this method because it is important research and should be utilised by social scientists with full confidence (Ahmed, 2010). It enabled the researcher to learn from activities of the past and to put the lessons learned into practice for the benefit of future (Walsh, 2014). Researcher has used approach as a stand-alone research methodology (Bowen, 2009; Chinedu & Mohamed, 2017).

3.4 Qualitative Data Analysis

Under this section, analysing procedures will deal with qualitative data analysis primarily done in order to fulfil the research objectives and research questions.

This study has adopted the qualitative content analysis (QCA) method since it is one of the most commonly used methods in qualitative research (Bengtsson, 2016). It

is also known as a method of analysing text documents obtained from narrative responses, open-ended survey questions, interviews, focus groups, observations, articles, books, or manuals (Hsieh & Shannon, 2005; Kondracki, Wellman, & Amundson, 2002). Krippendorff (2004) has defined it as follows:

“Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use.” (Krippendorff, 2004, p. 18)

The above definition is general to make content analysis applicable in either quantitative or qualitative approach. Meanwhile, another definition put forward by Downe-Wamboldt (2009) which highlighted the goal of content analysis is to link the results to their context:

“Content analysis is a research method that provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena.” (Downe-Wamboldt, 2009, p. 314)

In this study, the researcher has presented the data in words and themes, which make it possible to draw some interpretation of the results (Bengtsson, 2016). The reason for selecting this methodology is because the researcher intended to systematically transform a large amount of text into a highly organised and concise summary of key results (Erlingsson & Brysiewicz, 2017). The researcher has focused on the characteristics of language as communication with attention to the content or contextual meaning of the text (Hsieh & Shannon, 2005).

In this study, the researcher followed the four steps of qualitative content analysis as suggested by Elo and Kyngäs (2008), Saldaña (2016), Bengtsson (2016), and Renz, Carrington, and Badger (2018).

a) Familiarize with the data.

This is an important initial phase in the data analysis process which to read and re-read the transcribed interview or written documents while keeping the aim in focus. This is important to make the researcher familiar with the data that has been collected. This will make it easier for the researchers to break down the whole text into smaller parts.

b) Diving up the text into meaning units and condensing meaning units.

Once the researcher has familiarized himself with the data that has been collected, he will divide the text that has been read into meaning units which then condensed further while keeping the central meaning intact. The condensation should be a compact and concise version of the same text that still conveys the essential message of the meaning unit. Sometimes the meaning unit is already so compact that no further condensation is required.

c) Formulating codes.

Developing codes are descriptive labels for the condensed meaning units. Codes concisely expound the condensed meaning unit and are tools to help the researchers reflect on the data in new ways. Codes make it easier to identify connections between meaning units.

d) Developing categories and themes.

The codes will be sorted into number of categories that answer the questions *who, what, when* or *where*? This is done by comparing codes and appraising them to determine which codes seem to belong together, thereby forming a category. In other words, a category consists of codes that appear to deal with the same issue, i.e., manifest content visible in the data with limited interpretation on the part of the researcher. Category names are most often short and factual sounding.

These four steps are the result from the recommendations made by previous methodologists. In addition, the researcher has implemented this approach inductively. This is because the researcher find it is recommended to be applied if there is not enough former knowledge about the phenomenon or if this knowledge is fragmented (Elo & Kyngäs, 2008). By adopting this approach, the researcher managed to analyse the text with an open mind in order to identify meaningful subjects answering the research question (Bengtsson, 2016). Among of the main purposes of the researcher choosing inductive analysis for this study are to condense extensive and varied raw text data into a brief, summary format, to establish clear links between the research objectives and the summary findings derived from the raw data and to ensure that these links are both transparent, and last but not least to develop a module about the underlying structure of experiences or processes that are evident in the text data (Liew, Grisham, & Hayes, 2018; D. R. Thomas, 2006).

3.5 Data Presentation

Data presentation is an essential part in academic writing including thesis writing (Baharuddin, 2017c). The main purpose of this presentation, as advocated by Kumar (2014), is to make the findings easy and clear to understand, and to provide extensive and comprehensive information in a succinct and effective way. Methods of presentation must be determined according to the data format, the method of analysis to be used, and the information to be emphasized (In & Lee, 2017; Sekaran & Bougie, 2016).

There are various styles of presenting the data. According to Fah and Aziz (2006), data can be presented in one of the four ways: text, tabular form, graphical form, and statistic. Furthermore, it is suggested when the data, which often are numbers and figures, are better presented in tables and graphics, while the interpretation are better stated in text (Fah & Aziz, 2006; In & Lee, 2017).

As for the data of this study, the researcher has presented the QCA data analysis in in graphics, tables, and texts. Some raw data and analysis has been attached on the Appendix B and C section for purpose of reference and perusal.

3.6 Strategies to ensure trustworthiness in qualitative research

A number of strategies have been proposed to ensure trustworthiness of qualitative findings (Hadi & José Closs, 2016; Johnson & Christensen, 2014). Creswell (2007) suggested that at least two of these strategies should be used in any particular qualitative study. This suggestion is indeed to ensure the trustworthiness of a qualitative study itself. A brief description of the strategies that the researcher will use in this study will be given below.

3.6.1 Triangulation

Triangulation is the process of corroborating evidence from different individuals, types of data, or methods of data collection in descriptions and themes in qualitative research (Creswell, 2008). In this study, the researcher has deployed this method as among the strategies to enhance the trustworthiness (Saldaña, 2011), increase the credibility of it research findings (Merriam, 2009), and mitigate bias in this qualitative research (Fusch, Fusch, & Ness, 2018).

The “triangulation” term is borrowed from a concept in the field of navigation, where two separate lines of sight converging on a single point and forming the tip of a triangle (Morgan, 2019; Natow, 2019). The wisdom behind the triangulation strategy is to test the consistency of research finding from different types of inquiry (Patton, 1999). Therefore, the consistency of research findings will ensure trustworthiness in qualitative research.

There are numerous forms of triangulation available, *inter alia*, multiple data sources, multiple methodologies, multiple data analysis techniques, multiple researchers, mixing purposeful samples, and multiple perspectives to interpret data (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Merriam, 2009; Natow, 2019; Patton, 1999).

As for this study, the form of triangulation taken place in form of multiple data sources. This study has conducted an extensive data collection from primary and secondary sources. Then, from each source, the researcher has categorised the data into several types depending on its suitability and appropriateness. Multiple data sources are needed in this study in order to develop the comprehensive academic module and explore the information required to be included as part of the module’s components. The consistency of results from both data sources will portray the form of triangulation and thus increase the value of trustworthiness of the finding.

3.6.2 Multiple data sources

Apart from being as one form of triangulation, multiple data sources also can be served as strategy to ensure trustworthiness in qualitative research (Johnson & Christensen, 2014). This strategy is carried out in this study by comparing and cross-checking data collected from different time periods, locations, or perspectives (Johnson & Christensen, 2014; Merriam, 2009; Natow, 2019).

By having multiple data sources, this study has gained three positive results to the researcher as highlighted by Carter et al. (2014): (a) comparing the data led to an iterative process, whereby phenomena were explored more deeply, (b) the combined data led to an enhanced understanding of the context of the phenomena, and (c) convergence of the data enhanced trustworthiness of findings.

In this study, the researcher has compared and cross-check data collected from primary and secondary documents. Documents from both primary and secondary

sources will produce multiple responses and perspectives. Eventually, by having this multiple data sources, it enhanced the researcher's understanding on the needs to develop Fiqh Forensic module and allow the researcher to deeply explore the information required to be inserted in the said module.

3.6.3 Respondent validation

The idea of this kind of strategy is that the researcher needs to solicit feedback on his emerging findings from some of the people that he entrusted (Johnson & Christensen, 2014; Merriam, 2009). In fact, Maxwell (2013) viewed this strategy as important in order to avoid misinterpreting the data and analysis, as well as the perspectives on the phenomenon in question. This strategy is also critical for mitigating bias and misinterpretation of observations made throughout the data collecting and analysis phases (Maxwell, 2013).

In this study, after the complete draft of the Fiqh Forensic module has been developed, a copy of it has been sent to the two appointed experts for purpose of validating and verifying its content. The validation and verification will be done by way of experts iteratively reading the draft module and then give their mark, signature, as well as comment, if necessary, as remark to confirm the content has been validated and authenticated by them.

3.6.4 Peer review and frequent debriefing

Peer review is best known as discussion one's interpretations and conclusions with peers or colleagues (Johnson & Christensen, 2014). In qualitative research, peer review may also be used to improve a research or project's trustworthiness (Chenail, 2008; Johnson & Christensen, 2014; Lincoln & Guba, 1985).

There are several terminologies used by the researchers which connote the similar concept with peer review in qualitative research, such as member checking (Birt, Scott, Cavers, Campbell, & Walter, 2016; Lincoln & Guba, 1985), peer scrutiny (Shenton, 2004), and peer debriefing (Spall, 1998). In this way, this strategy is served as complementary to the other strategies used with qualitative research (Spall, 1998).

Lincoln and Guba (1985) advocated peer review as a means or strategy of enhancing rigor in qualitative research. Furthermore, Johnson and Christensen (2014), Shenton (2004), and Spall (1998) described this strategy as discussion of the

researcher's actions and interpretations during a study and conclusions at the end of the study with other people. Potential reviewers may come from various people including experts or experienced persons in field of study, researcher's supervisors, colleagues, members, critical peers, and disinterested peers. These reviewers should be sceptical, impartial, and play the devil's advocate by challenging the researcher to provide solid evidence for any interpretations or conclusions. They also can identify problems in researcher's study, and each problem must then be resolved by researcher. Apart from that, discussions with peers who are familiar with the research can also provide useful challenges and insights. Important to note that the potential reviewers must be someone whom the researcher trust to provide honest and open feedback about researcher's actions in his research project.

As for this research, the researcher has entrusted the data peer review to the two persons, first is his research supervisor named Dr. Ahmad Syukran Baharuddin, and second is his colleague in graduate research assistant named Miss Ruqayyah Razak. Both of them have ample educational background related to the researcher's study, whereas they have received both science and religious education since the early school until the post-graduate level. Furthermore, both of them were experienced persons in the field of study and having critical views towards the field of forensic science and Islamic law of evidence.

3.7 Summary

This has given an elucidation on the methodological aspect of this study. A total of six methodological aspects have been explained in this chapter which focused the details of methodology used in this study. This study will use Sidek's Module Development Model as research design to fulfil all research objectives. This study used documents collected from primary and secondary sources as data for the study. Qualitative content analysis has been applied in data analysis correspond to the type of data that has been collected. The presentation of data will comprise of various application, such as tabular form, specific abbreviations, APA 6th writing style, and graphical figures and illustrations. Last but not least, this chapter also mentioned on four steps needed to be taken in order to ensure the legitimation in mixed study.