Unit 2: Research Questions, the Literature Review, and the Research Proposal

In this unit we shall:

- Look at how you formulate and revise research questions.
- Look at all the parts that make up a research proposal and how to present your thoughts.
- Explain what a literature review is, how to perform it and how to present it.

On completion of this unit, you will be able to:

- Examine the characteristics that make up a suitable research topic.
- Explore rational and creative methods for formulating a research idea.
- Identify means of transforming research ideas into crafted research questions and proposal.
- Conduct a literature search, critique the literature and to present a literature review.

Reflection:

As a researcher, you need to put in a lot of time and effort because gathering information is a complex process. Your study topic is the primary factor in determining the quality of your findings (Reading Craze, 2013).

The study topic, as a common rule, must be clear, concise, and relevant. The key words here are "attractive," "expressive," and "frugal." (www.africaopl.org, n.d.).

Specificity is the keystone upon which all the other characteristics of an excellent research topic rest. It is important to have a research question in mind for any topic you choose. The effectiveness of each study depends on the researcher's ability to select an appropriate research question and problem. We will be stuck with whatever silliness, confusion, or gaps exist in our study topic and problem. One must have a clear understanding of the problem at hand and the aims of the study (ResearchArticles.com, 2013).

A good research topic should have the following qualities:

- Use plain language
- be precise
- include only necessary details
- emphasize the relevance of your subject
- and never use acronyms.

Techniques for generating and refining Research ideas

Rational Thinking	Creative Thinking
Examine your own strength and interests. • A topic in which you are likely to do well and have academic knowledge.	**Keeping a notebook of ideas** • Noting down any interesting research ideas.

Looking at past project titles	Exploring personal preferences using past projects
Discussion • Colleagues, friends, and university teachers are all good sources of good ideas.	**Relevance trees** • Use of relevance trees is like that of mind mapping.
Scanning the media • Stories which occur every day may provide ideas that relate to your interest.	**Brainstorming** • A Problem-solving technique can also be used to refine and generate research topics.
Searching the literature (Hawre Dlzar, 2013)	

Turning Research ideas into research questions:

To find a solution to a problem, research must first pinpoint what that problem is. To rephrase, what are you hoping to find out with this study?

When you have settled on a topic for your study, the next step is to formulate a research question. Several options are outlined below that you can consider taking:

1. ***First, specify the scope or structure of your study.***
   After zeroing down on a specific field of study, the next step is to settle on a specific organization or field of study to investigate.
2. ***Develop a broad research question***
   You only need to formulate the question that logically follows from your study idea at this point (López, 2012).

Literature Review of "Electronic Health Records in Cloud Computing":

Electronic health records (EHRs) stored in the cloud have received a lot of consideration in the recent decade for their ability to facilitate remote patient monitoring. To keep hackers at bay, medical institutions face a few difficulties due to the sensitive nature of patients' personal information. Therefore, it is imperative that E-healthcare systems incorporate appropriate measures to ensure that patient data is secure while being stored, accessed, and shared in the cloud.

This research ***(Mahajan et al., 2022)*** *provides a comprehensive look at the state-of-the-art blockchain-based options available for protecting healthcare records in the cloud or elsewhere. In this article, we put into action and assess many blockchain-based approaches. This paper's findings strengthen developing Healthcare 4.0 technology by identifying research gaps, highlighting obstacles, and outlining a road map for the future.*

In addition, most of the information captured and sent as images is highly confidential health information about patients. To achieve security over sensitive picture data communicated via the clouds, this research proposes a secure architecture connecting

e-Health and the cloud utilizing Hyper Chaos-based Image Encryption. Based on the severity and nature of the assault over the images shared in the cloud, this framework alternately implements any one of the recommended chaos-based image encryptions and image scrambled techniques ***(R et al., 2022).***

Improve the safety of sending sensitive information by proposing a new image encryption algorithm that makes use of chaotic maps and cycle shifts [16]. The entire plaintext image was encrypted using random numbers of size related to the original image and employed in cycle shift operations ***(Wang, Gu and Zhang, 2015).***

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