RESEARCH METHODS AND PROFESSIONAL PRACTICE

END OF MODULE ASSIGNMENT

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April 17, 2023

UNIT OUTCOME SUMMARIES

Unit 1

Scientific investigation and ethics are two essential components of the any research process that are closely intertwined. While ethics are principles that guide researchers in conducting research in a responsible and ethical manner, scientific investigation involves the systematic and empirical investigation of the natural world.

Ethics are critical in research to ensure that it is conducted in a responsible and ethical manner, and to protect the rights and welfare of research participants. From previous models, I have come to appreciate the importance of ethics in any field that involves research with human subjects or other living beings. Adhering to ethical guidelines is essential in maintaining the trust and credibility of the scientific community and ensuring that research is conducted in a responsible and ethical manner.

An interesting part of this unit is logical reasoning, which falls under 2 major categories: Inductive and Deductive Reasoning. While deductive reasoning starts with a general premise into a specific conclusion. Inductive reasoning reverses the process by starting with a specific premise into general conclusions. I see then, how logical reasoning is part of our daily lives. Whether intentionally or unintentionally, we reason bottom up or top bottom and identifying our reasoning process can contribute to many solutions.

Unit 2

I understand from this unit that a suitable research topic should be relevant, interesting, feasible, and significant to the field of study. Rational methods for formulating a research idea may involve identifying gaps in existing research or building on previous studies. Creative methods may involve brainstorming, examining personal interests or experiences, or exploring emerging trends in the field. Research ideas can be transformed into research questions and proposals by refining the topic, developing clear research objectives and hypotheses, and identifying appropriate research methods. Conducting a literature search and review is crucial in identifying existing research, understanding the current state of knowledge, and evaluating the strengths and limitations of previous studies. Critiquing the literature involves identifying gaps, inconsistencies, and limitations in previous research and providing a critical analysis of the literature.

Unit 3

There are various research methods, including qualitative, quantitative, mixed-methods, and action research Creswell (2014). Qualitative research involves exploring subjective experiences and meanings through observation, interviews, and case studies, while quantitative research involves measuring and analyzing

numerical data through surveys, experiments, and statistical analysis. Mixed-methods research combines both qualitative and quantitative methods. Action research is a type of research that involves collaborating with stakeholders to address practical problems and improve practice.

Selecting a research method should ideally be based on the purpose of the research. Researchers should carefully consider the research question and the type of data that is needed to answer it when selecting a research method and data collection method. It is also important to ensure that the data collection method is ethical, reliable, and valid.

Unit 4
Carrying out data collection methods such as surveys, interviews, observations, and experiments requires careful planning and attention to detail (Neuman, 2014). The choice of data collection method should be based on the research question and the type of data needed to answer it. Researchers should consider the benefits and limitations of each method and the type of data that would be obtained to ensure the accuracy and validity of their results. Since this module is purely secondary research, the opportunity to put into practice any of the research methods is limited. However, the understanding of how to conduct them, is one to keep note of.

Unit 5
Interviews and surveys are common data collection methods used in research, and both have their benefits and limitations (Denscombe, 2014). Interviews allow for in-depth exploration of complex topics and can provide rich data on individual perspectives and experiences (Rubin & Rubin, 2011). Surveys, on the other hand, can collect data from a large sample quickly and efficiently, making it useful for identifying patterns or trends (Dillman, Smyth, & Christian, 2014). Pre- and post-testing is another useful method for measuring changes or effects over time (Campbell & Stanley, 1963). Pre-testing establishes a baseline measure, while post-testing is used to measure changes or differences after an intervention or treatment. Choosing the appropriate methods depends on the research questions and data needed to answer them.

Unit 6
A good questionnaire should be well-designed and structured in a way that is easy to understand and respond to, with questions that are clear, concise, and relevant to the research topic. Poor questionnaires, on the other hand, may be confusing or biased, leading to inaccurate or unreliable data. When designing a questionnaire for research, it is important to consider the research question, target population, and the type of data needed. Once data is collected, it can be analyzed using various methods such as descriptive statistics, inferential statistics, or thematic analysis, depending on the research design and objectives (Neuman, 2014).

Also interesting to mention is the difference between a questionnaire and a survey. While both tools aim to collect data, a questionnaire is a subset of a survey, and the main difference is that a survey is more comprehensive and can include various methods of data collection QuestionPro (2021).

Unit 7

Validity, reliability, and generalizability are important concepts that impact the design and outcomes of a research study. Validity refers to the accuracy of the research findings, while reliability refers to the consistency of the findings. Generalizability relates to the extent to which research findings can be applied to other populations or contexts. These factors must be carefully considered during the research design process to ensure that the study produces reliable, valid, and generalizable results (Trochim, 2021).

Once data has been collected, it can be analyzed using statistical methods to identify patterns and relationships among variables. The results obtained can be presented using tables, graphs, or charts to make them more understandable to the audience. The analysis of the data will enable the researcher to answer the research question and draw conclusions based on the findings (Kothari, 2004).

Particularly looking at my chosen topic, I realize several inconsistencies with the results of the existing literatures. This has led to a curiosity on wanting to discover what is causing the inconsistencies and if reliability can be expected or tagged on any of the existing literatures.

Unit 8

The different levels of measurement are nominal, ordinal, interval, and ratio. Nominal measures are used to identify and categorize data into different groups, while ordinal measures are used to rank or order data. Interval and ratio measures are used to measure quantities and have equal intervals between values, with ratio measures having a true zero point (Salkind, 2010).

Measures of location and spread such as mean, median, mode, range, standard deviation, and variance are used to analyze and interpret data. These measures help to identify patterns and trends within the data (Field, 2013).

Hypothesis testing is used to make inferences about population parameters using sample data. Different tests are used depending on the nature of the data and the research question being addressed (Field, 2013).

Unit 9

There are different types of analysis that can be used to make sense of the data collected, including descriptive and inferential statistics, factor analysis, and regression analysis. Descriptive statistics such as mean, median, mode, range, and standard deviation provide an overview of the data, while inferential statistics are used to test hypotheses and draw conclusions about the population based on sample data (Field, 2013).

The different types of data collected may be presented using various charts, including bar charts, histograms, scatterplots, and pie charts, depending on the nature of the data and the research question being addressed (Field, 2013).

Unit 10

Structuring a dissertation requires a clear plan and organization of ideas. It is important to have a well-defined research question or hypothesis, a review of relevant literature, a detailed methodology, and the analysis and interpretation of

results. The dissertation should also include a conclusion that summarizes the key findings and their implications, and recommendations for future research (Wisker, 2018).

Preparing oneself for dissertation writing involves setting realistic goals, scheduling time for writing and research, seeking feedback and support from supervisors and peers, and developing effective writing habits (Murray, 2011).

Unit 11

Completing the learning loop involves reflecting on the knowledge and skills gained through a learning experience, identifying areas for improvement, and creating an action plan to address those areas. The Professional Skills matrix provides a useful tool for assessing one's strengths and weaknesses in various areas, such as communication, teamwork, and problem-solving.

After completing the matrix, it is important to create an action plan that outlines specific steps to address areas of weakness and build on strengths. This may involve seeking out opportunities for further learning, practicing new skills in real-world situations, and seeking feedback and support from peers and mentors.

Unit 12

Project management involves planning, organizing, and managing resources to achieve specific goals within a defined timeline and budget (Project Management Institute, 2017). Understanding project life cycles and methodologies, such as Agile and Waterfall, can help in selecting the most appropriate approach for a given project.

With the increase in remote work, familiarity with technologies and software, such as project management software, virtual communication tools, and cloud-based collaboration platforms, is crucial for effective project management. Risk management is another key aspect of project management, requiring the identification and evaluation of potential risks and the development of strategies to mitigate them.

Effective risk management involves preparing a risk management plan and being able to adapt to changing circumstances and manage project change effectively (PMI, 2017).

References:

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Houghton Mifflin.

Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches. Sage publications.

Denscombe, M. (2014). The good research guide: For small-scale social research projects. McGraw-Hill Education.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). Internet, phone, mail, and mixed-mode surveys: The tailored design method. John Wiley & Sons.

Field, A. (2013). Discovering statistics using IBM SPSS statistics. Sage.

Kothari, C. R. (2004). Research methodology: Methods and techniques. New Age International.

Murray, R. (2011). Writing for academic journals (2nd ed.). McGraw-Hill Education.

Neuman, W. L. (2014). Social research methods: Qualitative and quantitative approaches. Pearson.

Rubin, H. J., & Rubin, I. S. (2011). Qualitative interviewing: The art of hearing data. Sage.

Salkind, N. J. (2010). Encyclopedia of research design. Sage.

Trochim, W. (2021). Validity. Research Methods Knowledge Base. Retrieved from https://conjointly.com/kb/validity

Wisker, G. (2018). The undergraduate research handbook (2nd ed.). Palgrave Macmillan.