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PhD Students Handbook

WHAT AM I GETTING MYSELF INTO!

As a new PhD student, you may not be aware of what you are getting yourself into! As we all know a PhD can be extremely demanding, arguably more demanding than a full time job. Depending on a students commitment to study (part/full time) and the type of program, the length of their course can vary between three to six years. A PhD is the most independent form of study, with very few lectures. Of course the crux of a PhD is to perform your own independent research project , under the guidance of an advisor or supervisor. The purpose of this PhD handbook is to take new students through the various phases of a research project. However, the emphasis lies in addressing issues and inefficiencies that occur at the stage of data collection and the way in which data can be interpreted and analysed. It is therefore hoped this short, quick guide is of help to new and current PHD students alike!

PHASE 1– CHOOSING RESEARCH AREA

Inevitably, a student will be required to choose an area to research. The topic is not chosen out of a hat! Ideally, the student will perform background research to identify current issues in their area of interest and will raise a question in that specific issue. This question will formulate the title of their thesis.

It is important that the student is specific in choosing a topic. Attempting to answer a broad or unclear question will most likely end up in information overload and no clear and concise answer to the said problem, which will leave the student with more reading and writing that they can muster! Simply put, a broad question will open up an excessive amount of avenues to investigate and it will be like going down the rabbit hole, it is essential for a student to stick to a specific question. Of course, every PhD candidate will have a supervisor to guide them through this phase.

PHASE 2 CHOOSING DATA COLLECTION METHODS

The type of data collection required is partially dependent on the chosen research question. Regardless of a students area of research, primary and secondary research is a precursor. Starting with the latter, secondary research entails an in-depth literature review of previous works into chosen topic area, an analysis of the conclusions derived from past projects and an examination and assessment of the different schools of thoughts that are currently apparent in the field. The former, primary research, is the implantation of a students own research in order to add to this field by bringing in new information from a different angle. Examples include questionnaires, focus groups and interviews. Before choosing a mode of research, its feasibility must be assessed; who are my target audience?, which environment am I going to be collecting the data in? and where will I be collecting the data? These questions will

highly influence your chosen data collection method i.e. questionnaires or interviews as well as the mode of collection i.e. paper, tablets, mobile devices etc. Specifically:

- Analyse your target audience; what are their capabilities and which methods will drive the most engagement from them.
- In assessing the environment consider internet connections, dangers (such as theft, if using tablets) and practicality (can you carry and collect 200 paper questionnaires to distribute around a school?)
- What is the most appropriate sample size?

The keyword is organization. Understand and address these issues as well plan ahead with those groups of individual

Phase 3– DATA COLLECTION

Data collection is a fun and tedious task. The enjoyable aspects of data collection is performing and listening over interviews, getting to know peoples opinions and using questionnaires and focus groups and interacting with different kinds of people. The assembly, organization and input of the data can be slow making one feel like watching paint dry. Transferring data from a paper questionnaire, interview or focus group is a tedious task that requires a lot of time and patience along with the constant worry of ensuring data input is accurate. Inevitably, natural human error will lead to some errors in data input. These are common problems with manual data entry. However, data automation can reduce the risk of errors. Data automation allows individuals to simply scan the document containing data which is then picked up by intelligent data capture software, extracting the necessary data and exporting it to the desired database/registry. For example, If a student has a questionnaire, upon scanning of that document the answers are pre-populated either into an Access database, Excel spreadsheet or whichever software preferred. The advantages of this are that a student spends less time worrying about manual data entry, the data is readily available in the desired format quicker for analysis and interpretation and finally the data is also accurate as intelligent data capture software extracts data at a 99.9% accuracy. However, the key benefit of the time savings is the opportunity cost generated. Students are able to spend time that would have usually been spent manually entering the data actually analyzing, interpreting , studying and working with the data-the fun bit! Therefore it puts students in a better place to answer the issues identified in their research area, with a greater amount of reliability and validity. An additional advantage of intelligent data capture is the use of business rules and validations. Including these 'back end' designs in questionnaires can help with identifying anomalies and generally return an accurate data set in compliance to the rules. Deploying your survey online or on a mobile device? The same method applies except the survey is directly linked to your output format and is sent there upon submission. This means a student can begin to analyse the data as its is coming through, as opposed to waiting for all the data to become available.

PHASE 4– ANALYSIS AND INTEPRETATION

Thanks to intelligent automated data capture solutions, students have more time to spend on analyzing and making sense of the data. Consider using an interactive dashboard. Excel, SPSS are great tools to use for data analysis but they present data statically. To interact with or impose different angles of analysis one would have to change the criteria that is to be analysed and would result in repetitive reselection of data to create different static charts. An interactive dashboard is directly linked to the connected data streams (which can be derived from various different sources) and based on controls present on the dashboard, an individual can bring in a different set of data, exclude other data sets and perform a variety of different analysis using a few clicks of a mouse . One can explore associations in data, analyze and view the data in real time i.e. as the stream is being fed into the dashboard effortlessly, visually engage with data using state of the art graphics, search across data directly and indirectly and capture and ingest data from mobile devices.

SEEING IS BELIEVING

Looking at how data automation and the interactive dashboard works will do it better justice than mere description. Students, book you free knowledge share workshop where we can demonstrate for you how the various technologies work. There is no need for you to travel, we will come to you! Get your supervisor involved who will undoubtedly be supervising a whole host of students and benefit yourselves as well as your colleagues.

WRITE UP/REPORT STRUCTURE GUIDELINES

- Research title
- Short statement summarizing work.
- Acknowledgements
- Statement of problem.
- Review of relevant literature.
- Hypothesis statement.
- Research objectives statement.
- Description of research design.
- Selection of variables.
- Description of sample section procedure.
- Describe how data was collected,
- Present findings graphically and in writing.
- Conclusion, statement of limitations and implications.
- Areas to consider in future research.
- Bibliography/references.
- Appendix

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