Qualitative Research Methods

ELEC6211 Project Preparation

Qualitative Research

- A rigorous approach to understanding the issues that underpin the use of technology
  - **Why/How** people use or do not use a technology
  - Factors that effect the technology use
- It is all about answering a research questions and digging into the issues.

Qualitative Research

- The underlying paradigm of qualitative methodology is Interpretive .
  - The interpretive paradigm emerged during 1970s as a reaction to positivism.
  - Interpretive paradigm views reality as subjective; there can be multiple perspectives on reality rather than a single truth that was proposed in positivism

Qualitative Research

- Qualitative researchers seek to understand phenomenon though inside perspective or lived experience from people in that context rather than the fact from existing theories which suggested by positivism.
  - As the purpose of qualitative methodology is to achieve in-depth information from people's experience, few participants are selected and collect the data through observation or interview.
  - The textual data are then analysed by interpretative process.

Qualitative Research

- The major advantage of qualitative research methodology is an in-depth understanding of the research context;

  - it explores the possible issues in the context and may provide a chance for discovering unanticipated.

  - However, as the data is collected form a small group of people and interpreted by the researcher, the major drawback of this method are restricted generalization and the impact of researcher's bias on the research findings

Methods

- Interviews
- Focus Groups
- Delphi Method
- Case Studies
- Contextual Reviews
- Content Analysis
- Triangulations

Interviews

- Interviews are one way of eliciting qualitative data, and have two general forms: individual interviews and focus groups.
  - Individual interviews take the form of a one-on-one, guided discussion between the participant and interviewer.
  - Focus groups on the other hand involve a discussion between participants as a group, structured and guided by a trained moderator.
  - Both methods involve questioning the participants about the research problem being investigated, and finding out their opinions regarding the issue in depth

Type of Questions

- You can use a mixture of questions when interviewing
  - Just make sure you are consistent and ask all the interviewees the same questions.
- I prefer to use structured questions for the few minutes
  - These helps focus the mind of the interviewee
- Then move to semi-structure
  - Encourages the interviewee to explain the response in more detail

Interviews/Focus group

- The key characteristic which distinguish a focus group from an individual interview is the capitalisation of interactive discussion between selected group of participants to produce data and insight on a specific research issue rather than asking each participant a series of questions.

- To find out possible factors affecting the phenomenon, some researchers claim that individual interview provide a wide range of factors more than a focus group if the number of participants is equal.

Interviews/Focus group

- This group of researchers give a reason that a participant in an individual interview is more confidential than a focus group to express their own individual view on the subject.
  - This is because the individual interview is free from problems such as: dominant group members, peer pressure and group dynamics that may steer participants' responses.
  - However, another group of researchers believed that the dynamic of group interaction can also provide variety of possible factors as well, because each individual's idea may spark off one another's idea; suggesting dimensions and nuances of each comment that any one individual might not have thought of.

Interviews/Focus Groups

- The strength of focus group over individual interview is that the factors that are found in a focus group seem to have a higher degree of precision and validity than an individual interview .

- In an individual interview, a participant may suggest the factors that are extreme or not socially share without other members' evaluation on that comment.

- In a focus group, in contrast, as participants can ask questions and comments on each other's point of view, social interaction in the focus group facilitates the researcher determine which form of data is valid.

Interviews/Focus Groups

- The degree of consensus among participants on each factor is important for this preliminary study. It indicates how many of the experts confirm on each factor; this information will be used for refactoring factors in the proposed model.

- In an one-to-one interview, to find a consensus among participants on each factor, the researcher make comparisons of the interview data from each participant to determine similarities and differences.

How many people?

- How many people do you need to get to make a meaningful results?

- How many organisations?

Delphi Method

- In the early 60's the Delphi method was introduced as a way of seeking consensus among a homogeneous group of experts.
- Delphi's are designed with the purpose of achieving consensus and have three core uses that centre on producing a consensus result.
  - Exploratory Delphi – Used for forecasting future events.
  - Normative Delphi – Used to achieve consensus on policies that relate to objectives and principles
  - Focus Delphi – Use to identify the range and diversity of feedback from stakeholders of a specific policy

Delphi Method

- The Delphi's traditional form usually involves a questionnaire and a series of sequential loops or iterations.
  - Each iteration maintains the anonymity of comments received by panel participants.
  - Then using controlled feedback, reports the findings back to the panellists for retrospective review of the original questions and the anonymous feedback.
  - In an effort to draw consensus and whether the anonymised responses alter their prior reactions / responses to the questions asked
- The number of rounds or iterations in Delphi's are variable a higher consensus or minimizing attrition of responses due to panellists dropping out after a couple of rounds of the Delphi study

Delphi Method

- Practically these take a lot of time to set up
  - Initial design of the questions/material
  - Setting up the contact with the experts
  - Analysis of the responses and then resend
  - Chasing up the experts for the 2nd and 3rd rounds.
- However all this is balanced by the consensus nature of the results.

Case Studies

- Aims to obtain an in-depth understanding of a situation.

- Data is collected in a variety of ways
  - Asking people: Interviews/focus groups, diary entries (video/audio recording)
  - Observing people: contextual reviews, ethnographic studies, grounded theory
  - Often over a period of time (longitudinal)

Case Studies

- Although time consuming the advantage is the depth of inside
  - Can be difficult to generalise
- You need to be able to given rationale for choosing the case
  - Ensure your instruments are well designed
  - Plan the analysis

Contextual Reviews

- One essential drawback of questionnaire:
  - they are based upon perceptive choice in a theoretical situation
  - or that information recalled is subject to the participants own memory.
- Observational based studies which allow the participants to maintain their natural objectivity skipping any perceived reaction or recall of past memories.
  - takes into account the real feelings and motivations behind people's reactions, in situation.
  - include that contextual understanding.

Contextual Reviews

- Contextual design embraces the understanding gained through direct observation of participants in a more natural environment.
  - The habitual patterns of behaviours are then revealed and actions are seen to be reactive, without the participant thinking too deeply about them.
- There are drawbacks to the use of observational techniques.
  - it is an expensive method to adopt.
  - The data collected is can also be very limited.
  - What can be seen as habitual behaviour for one individual cannot be extrapolated to be representative of the whole target population.

Content Analysis

- The same procedure applies to information you have created (interviews focus groups) or secondary data(reports, other peoples studies)
  - You need to use codes to represent the information
  - You want to group the important information, under each code
  - You then need to analyse the findings

Content Analysis-Coding

- While you can do all this by hand use software such as Nvivo
  - Free in to the university
  - Lost of expertise around, also free training
- Second coding
  - Another person recodes a sample of your work to make sure that there is some agreement .

Triangulation

- Triangulation is a 'cross examination technique' that facilitates the validation of research findings through cross verification from more than one source of data or methods

- By using triangulation, the researcher can overcome the weakness of each single method and also any intrinsic bias inherent in each source of data

Literature review

Student validation **Expert validation**
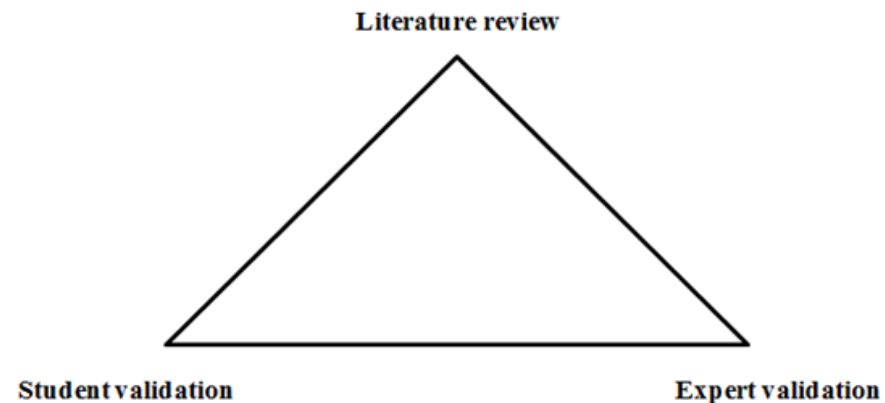
Triangulation

- According to Denzin (1978), there are four types of triangulation:
  - Data triangulation: involving data from different time, locations and persons
  - Investigator triangulation: using multiple researchers in an investigation
  - Theory triangulation: using more than one theoretical scheme in interpretation of data
  - Methodological triangulation: using more than one research methodologies for gathering data, such as interview, survey and documents

Triangulation

- Data triangulation provides a researcher a clearer understanding of the phenomenon, and convergence between the finding form these three different source of information establish the validity of research findings.

  - However, the primary disadvantage of this technique is time-consuming; it requires more time to collect and analyse the data yielded form the different sources.

Mixed Methods

- Mixed methods is the combination of research methods in a single study either at the same time (parallel) or one after the other (sequential)
  - Normally this is using qualitative and quantitative methods

Questionnaires

- Questionnaires are Quantitative methods,
  - but are often use as part of the data collections method with interviews, focus groups, case studies etc
  - Categorical data –Non-parametric test
- Likert say that people interpret a rating scale as if they are equal distance apart
  - Strong agree, agree, disagree, strongly disagreed
  - So if filled in by humans the rating scale can be treated as interval data and parametric tests can be used (if the data is normal)

Protocols

- You need to plan your work carefully
  - You only get one shot at using experts/participants
  - this is called your protocol
- The Ethics application will reuse the information so it is not a waste of time writing a protocol.

Protocols

- It is all about looking after the people.
  - Where will you met them
  - If they come to you, where do they sit, will you offer a drink etc.
  - What happens when you finish: give them something to take away, etc.
  - Some of this is covered in the ethics application (consent, participation information sheet, data protection) but the protocol goes into more detail

Piloting

- Try out your protocol
  - On your colleagues first before you go to participant
  - Check the meaning of the questions with colleagues or experts
  - Backwards translate any question you have written in another language

Pilot **Study**

- Before you go to a large number of participant try out the complete process (data gathering, analysis, etc) on a smaller number first
  - Allows you to identify and correct any problems
  - Allows you to know how many people you need from a larger population

Report the findings

- The **findings** from qualitative methods are often longer (more pages) than quantitative results
  - You need to include snippets of the transcripts
  - Multilingual
  - coding

Other Resources

- COMP6220: Qualitative Research Methods for Assessing Technology (available from the ECS pages)
- Remember there are a lot of resources on the web.
  - Do be careful when crossing disciplines:- is it still the norm in your discipline