Computing Project

(COMP08053)

Lecture 7

Project Research and Investigation Skills

Using secondary research to inform your project

You can draw upon various data to support ideas:

Primary – material you have gathered yourself through empirical research

Secondary - material which is gathered by other people which is available in a variety of sources

Using secondary research to inform your project

Secondary data often referred to as **the literature**

Collection and discussion of facts and ideas within this data is called the **Literature Review**

Amount of detail in a Literature Review depends on your **project type**

Projects involving development of prototype will have a less detailed literature review than investigative projects

Using secondary research to inform your project

Normally start from the **general** and working towards the **specific**, focusing on **key work** or *ideas* directly relating to your project

Pull ideas and **themes** from literature to produce a coherent argument/discussion for your project

Using secondary research to inform your project

Literature review normally comprises a two stage process:

1. **Identifying subject matter** relevant to the topic

2. Finding **references** to authors who have published on these subjects

Using secondary research to inform your project

Internet means that it is relatively easy to find a wide range and **rich variety of sources** for your project

Be careful when accessing resources – need to **check quality**

Practically anything can be published on Internet so need to **be critical of what you find**

Using secondary research to inform your project

Look for **alternative** or **conflicting opinions** and **arguments** – may see **‘schools of thought**’, certain themes and issues appearing

Helps you **build up a picture of the area** and how it might relate to your project

Using secondary research to inform your project

Danger is that you **spend so long trying to collect everything** written about your area that you never get on with your project

From reading all the material – need to **take notes effectively** to enable you to find quotes, arguments etc quickly when writing your report

Using secondary research to inform your project

Think of ways you can **present work and ideas**

For example, **tables** are good for comparing and contrasting work and ideas

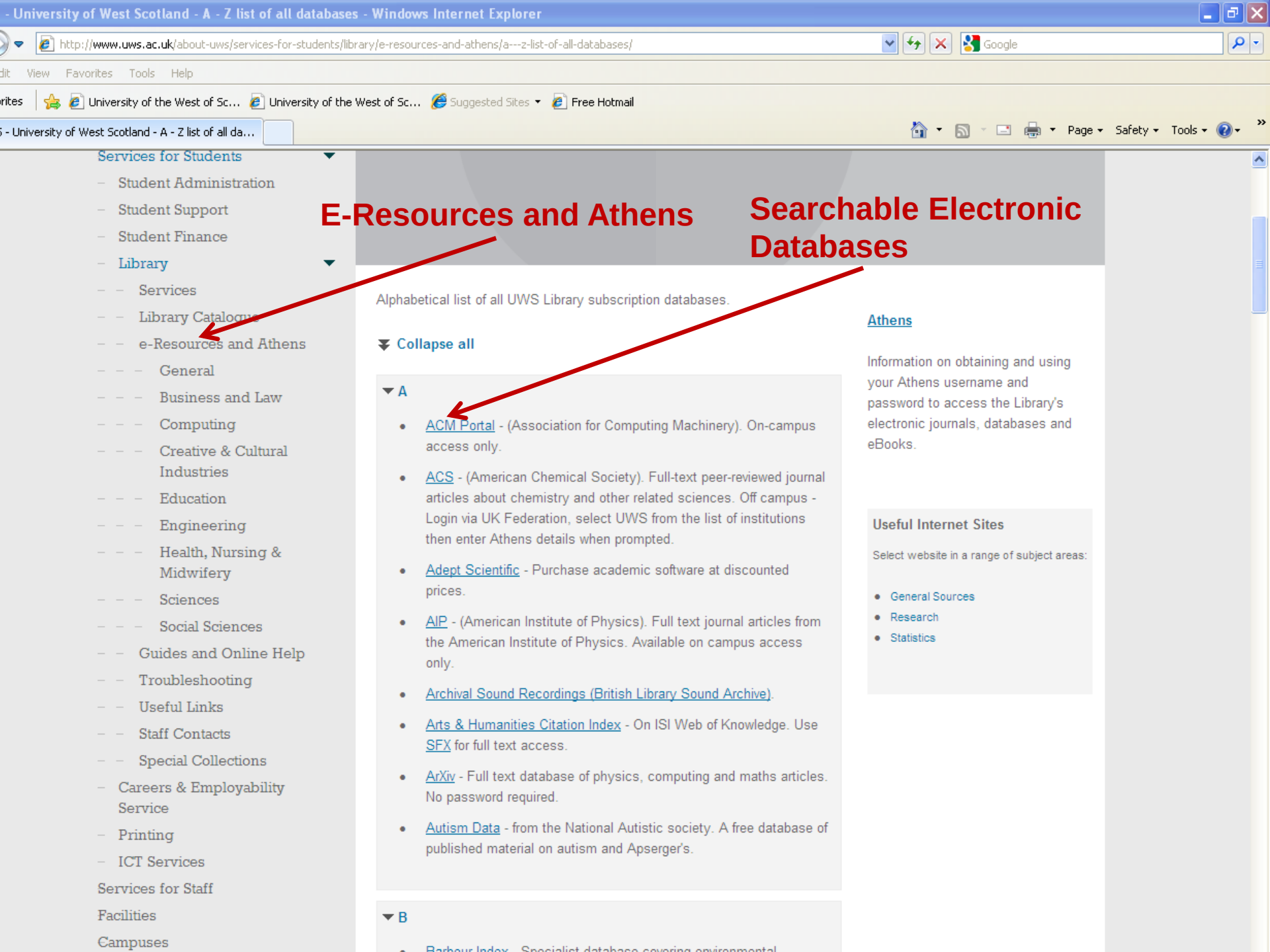
Diagrams/Figures are also a useful way of presenting ideas and help break up text

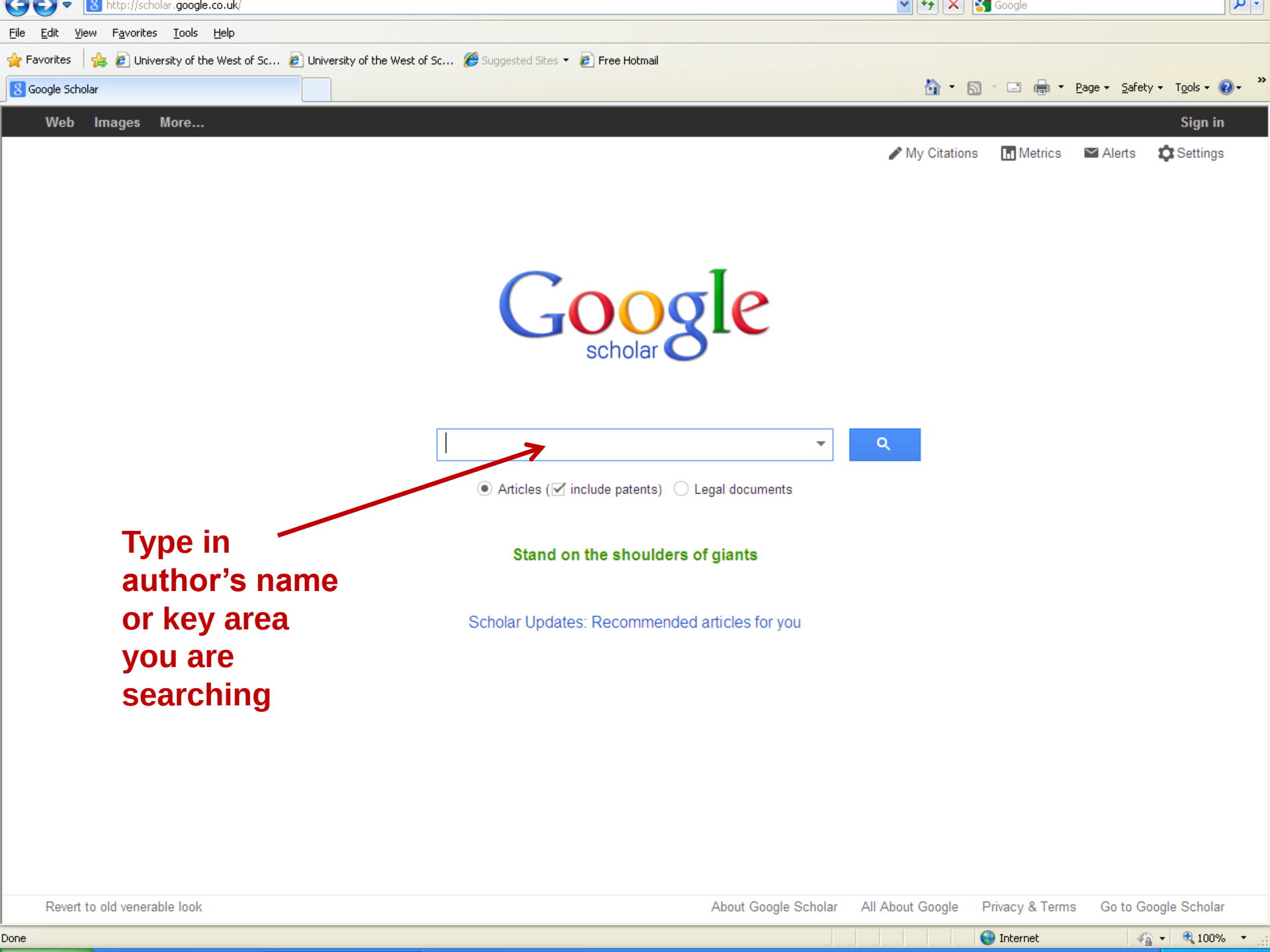
Using secondary research to inform your project

Use **UWS Library e-Resources** and **Athens**
http://www.uws.ac.uk/about-uws/services-for-students/library/e-resources-and-athens/

Useful databases include:

ACMPortal
Emerald
ERIC
IngentaConnect
ScienceDirect


- University of West Scotland - A - Z list of all databases - Windows Internet Explorer
http://www.uws.ac.uk/about-uws/services-for-students/library/e-resources-and-athens/a---z-list-of-all-databases/
Google
View
Favorites
Tools
Help
University of the West of Sc...
University of the West of Sc...
Suggested Sites
Free Hotmail
- University of West Scotland - A - Z list of all da...
Page
Safety
Tools
Services for Students
Student Administration
Student Support
Student Finance
Library
Services
Library Catalogue
e-Resources and Athens
General
Business and Law
Computing
Creative & Cultural Industries
Education
Engineering
Health, Nursing & Midwifery
Sciences
Social Sciences
Guides and Online Help
Troubleshooting
Useful Links
Staff Contacts
Special Collections
Careers & Employability Service
Printing
ICT Services
Services for Staff
Facilities
Campuses
E-Resources and Athens
Searchable Electronic Databases
Alphabetical list of all UWS Library subscription databases.
Collapse all
A
ACM Portal - (Association for Computing Machinery). On-campus access only.
ACS - (American Chemical Society). Full-text peer-reviewed journal articles about chemistry and other related sciences. Off campus - Login via UK Federation, select UWS from the list of institutions then enter Athens details when prompted.
Adept Scientific - Purchase academic software at discounted prices.
AIP - (American Institute of Physics). Full text journal articles from the American Institute of Physics. Available on campus access only.
Archival Sound Recordings (British Library Sound Archive).
Arts & Humanities Citation Index - On ISI Web of Knowledge. Use SFX for full text access.
ArXiv - Full text database of physics, computing and maths articles. No password required.
Autism Data - from the National Autistic society. A free database of published material on autism and Apserger's.
B
Athens
Information on obtaining and using your Athens username and password to access the Library's electronic journals, databases and eBooks.
Useful Internet Sites
Select website in a range of subject areas:
General Sources
Research
Statistics


http://scholar.google.co.uk/
File Edit View Favorites Tools Help
Favorites
University of the West of Sc...
University of the West of Sc...
Suggested Sites
Free Hotmail
Google Scholar
Page Safety Tools
Web Images More...
Sign in
My Citations
Metrics
Alerts
Settings
Google
scholar
Articles (include patents)
Legal documents
Stand on the shoulders of giants
Scholar Updates: Recommended articles for you
Type in author's name or key area you are searching
Revert to old venerable look
About Google Scholar
All About Google
Privacy & Terms
Go to Google Scholar
Done
Internet
100%

Using primary research to inform your project

A literature review and **secondary research** allows you to **‘set the scene’** for your project

What you have **learnt from the literature** may help you think about **key questions** and **issues** you might want to explore yourself through **primary research**

Interacting with ‘live’ organisations

Which organisation(s) do you need to interact with?

How many organisations/people do you need to talk to?

Why one particular organisation rather than another?

Who do you need to talk to in the organisation?

How do you get access to them?

What if they are busy? Do you have a fall back plan?

Interacting with ‘live’ organisations

Remember:

They may not share your time concerns or be as interested in your project as you are

Always be **polite** and **punctual**

Methods for interaction

Questionnaires and Surveys

The two terms are often used interchangeably

A **questionnaire** is a specific instrument for data collection, whereas…

A **survey** is part of a wider methodology that encompasses elements such as sample design, data collection instrument and analytic techniques

Methods for interaction

Questionnaires and Surveys

Best used with current topics where **people are happy/eager/interested to contribute** and where they have already well informed opinions

Think carefully about **target audience** – don't just 'fire off' questionnaires

Direct questionnaires to **named individual(s)**

Methods for interaction

Questionnaires and Surveys

Take care with questionnaire **structure** and **order of questions** – be systematic and logical

Make layout attractive – be **consistent and clear**

Avoid **unanswerable questions** or ones lack relevance and purpose

Keep questionnaire short and to the point – around **2-4 pages**

Methods for interaction

Questionnaires and Surveys

Think about the types of questions you might ask, for example:

- **Closed** (yes/no)
- **Multiple-choice** (several options to chose from)
- **Scaled questions** (scale from 1-10 or 1-4)
- **Open** (respondent supplies own answer)
- **Matrix questions** (identical response categories assigned to multiple questions)

Methods for interaction

Questionnaires and Surveys

Next slide shows part of an actual questionnaire on how students use games for learning

Note the use of matrix, open and multiple choice questions

Also note at the top of the page it states what the purpose of the questionnaire is

Questionnaire for the Identification of the Main Motivations for Playing Computer Games Current

The purpose of this questionnaire is to assess and identify the main motivations for playing computer games and also to assess the applicability of these motivations to Higher Education. We would be grateful if you could complete this survey as the research could have an affect on how we learn in the future and will hopefully make the learning process more interesting for us all.

16. If you had the opportunity to use computer games for learning in your programme at University, how would you rate each of the following reasons in terms of importance in learning?

	Very Important	Important	Neutral	Un-Important	Very Un-Important	Don't Know
Playing games provides me with a challenge.						
Playing games allows me to compete.						
Playing games allows me to cooperate.						
Playing games gives me a feeling of recognition.						
Playing games gives me a sense of control.						
Playing games allows me to enter a fantasy world.						
Playing games stimulates my curiosity.						
Playing games helps me to fill in my leisure time.						
Playing games gives me pleasure.						
Playing games helps me to relax.						

17. Please list any computer games you have used to learn in Higher Education along with the name of the module it was used in.

18. Do you believe that computer games can be used to learn in a Higher Education environment? Please give reasons for your answer.

19. What types of skills do you think can be obtained from computer games that would be relevant to Higher Education?

- [ ] Problem solving
- [ ] Reflection
- [ ] Analysing/classifying
- [ ] Collaboration/teamwork
- [ ] Leading/motivating

Methods for interaction

Questionnaires and Surveys

Show through the questions asked you have a **good background knowledge** in the area

Take care over issues of **confidentiality** or security – do you need to know the respondent's name/position?

Most questionnaires are **best supported by interviews** – can ask question whether they would be prepared to take part in follow-up interview

Methods for interaction

Questionnaires and Surveys

You can develop a **paper-based survey** (can be quick and effective) and get people to complete it while you are present

You can use some **online survey software** such as:

SurveyMonkey (www.surveymonkey.com)

Zoomerang (www.zoomerang.com)

Methods for interaction

Interviews

Types of interview:

(i) **Informal, conversational interview:** more open, interviewer ‘goes with the flow’

(ii) **Open ended interview:** same open ended questions asked to all interviewees.

(iii) **Closed, fixed-response interview:** interviewees choose answers from the same set of alternatives

Methods for interaction

Interviews

Preparation for interview:

(i) **Explain purpose** of the interview

(ii) Address terms of **confidentiality**

(iii) **Explain the format** of interview

(iv) **Indicate how long** the interview takes

(v) Ask them if they have **any questions**

(vi) **Get consent if recording** the session

Methods for interaction

Interviews

Types of interview questions:

(i) **Behaviours** – what the person does

(ii) **Opinions/values** – what the person thinks

(iii) **Knowledge** – facts about a topic

(iv) **Sensory** – what people have seen, heard etc

(v) **Background/demographics** – standard background questions (e.g. age, education etc)

Methods for interaction

Interviews

Conducting the interview:

(i) Wording should be open-ended

(ii) Questions should be as neutral as possible

(iii) Questions should be asked one at a time

(iv) Be careful when notetaking – don't jump to take a note or be very pleased with an answer, might influence how interviewee answers questions

Methods for interaction

Interviews

(v) **Provide transition between major topics** – “We’ve been talking about…now I’d like to move to…”

(vi) **Don’t lose control of the interview –** interviewee strays to another topic, starts asking questions to interviewer, takes so long answering one question that run out of time

Methods for interaction

Interviews

Immediately after the interview:

(i) **Verify that tape recorder worked throughout**

(ii) **Make notes on your written notes –** fill out any incomplete points, make sure pages are numbered etc

(iii) **Write down any observations of the interview** (e.g. setting, attitude of interviewee, any surprises during interview)

Methods for interaction

Observational research

Involves the **direct observation** of the people

For example, **observing people use a particular computer application or prototype**

Observe how they **interact** with the system, where they go to on the screen, length of time to conduct tasks, any errors or mistakes used

Methods for interaction

Observational research

Can be a problem with researcher bias – the researcher **“may see what they want to see”**

For example, is someone banging on their keyboard a sign of frustration with the application or just someone who types loudly?

Methods for interaction

Observational research

Types of observation

(i) **Overt observational research** – the researcher **identifies themselves** as researchers and explain the purpose of their observations

Problem is that **subjects modify their behaviour** when they know they are being watched – they portray their **“ideal self”** rather than **“true self”**

Methods for interaction

Observational research

(ii) Researcher participation – the researcher participates in what they are observing

Researchers that participate tend to **lose their objectivity**

Methods for interaction

Observational research

(iii) Covert observational research

This approach **should never be used** unless you have permission from relevant authorities, as can lead to legal and possibly criminal action. Extremely sensitive ethically

Researchers do not identify themselves and mix with subject undetected

Subjects' behaviour is not contaminated by presence of the researcher

Primary & secondary research

Overall you need to consider how much **secondary (literature) research** you need to conduct to **‘set the scene’**

How much **primary research** you will need to conduct in order to explore key questions / issues with real organisations and people

How much **primary research** you will need to conduct to **test and evaluate your prototype** or idea with actual users