CSE 498 Social and Professional Issues in Computing
Weekly Assignments Description

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Resource Location

All the resources, project description, final report template and grading rubrics for the project is available at:
https://drive.google.com/drive/folders/1Mj5kgYUN44xZB6Jd2icvkSAF2ZK8JeiY?usp=sharing
The video lectures are available at:
https://drive.google.com/drive/folders/1zahsTCAPOEhAAtnkpH0onwHBTSEdYoIf?usp=sharing
The reading materials are available at:
https://drive.google.com/drive/folders/17CumqHJJMb85uJkXiThdpJhlAuGEfcfb?usp=sharing

Final Report Template

Template for the Final report is available at the end of this document (click this link to follow).

Grading Criteria and Grading System

The final grading will be based on the criteria mentioned in the document linked below:

https://drive.google.com/open?id=1Ju9-ys1DWHGOVTpSTxtYdjoD9LLVO7EI

Assignment 01. Planning a Research Topic

In this course, every participant plans and conducts a small mini-study. Every course participant should already this week think of a topic and possibly decide on the topic already.
The topics must be:

- **About computing** (you can easily find conference papers and/or journal articles on that topic in ACM Digital Library or IEEExplore.)
- **Empirical** (for answering the research problem, you'll need to collect data yourself - for instance, doing interviews, collecting data through questionnaires, or thoroughly testing whether a program meets its specifications.) (Reading books and articles is not an empirical method!)
- **Small** (short enough to be done over 6 weeks)
- **Doable** (for instance, it cannot require interviews of CEOs, university professors, or any other hard to access groups)
- **About a problem** (lack of knowledge, a recognized problem)

Videos and slides

Watch and listen carefully the following videos, and try to understand

Video 1a. What is Research
Video 1b. Research design
Video 2. Computing research
(https://drive.google.com/drive/folders/1zJQpeWIeb_F3yaaui32h1icUf-4DQDyu?usp=sharing)

Acknowledgement: *The videos and slides are presented and prepared by* ***Dr. Matti Tedre****, Associate Professor, Department of Computer and Systems Science (DSV), Stockholm University, Sweden.*

Task 01A. Write a post in forum "Planning a research topic"

Write a post in Forum 01 and post the link in assignment 01A, (individual submission) explaining the problem or question that you want to focus on, and how do you think you could perhaps solve that problem or answer the question. You don't need to be specific - the only important thing is that everyone should have a somewhat suitable topic in mind for next week.
Previous topics have included, for instance, a comparison between two competing solutions for computer memory management, comparison of different image packing

algorithms, a survey on EWU students' preferences on e-learning, an exploration of mobile technology as a fashion item, and an evaluation of specific features.
You can think about the project through some of the questions in `what?' and `why?' quadrants of the `Watson box':

What?	*Why?*
What am I really interested about? What do I want to know better or understand better? What questions do I think are really important to be solved?	Why is this going to be interesting or important to others? Who will be interested in reading about what I found? Does this reveal something that we didn't previously know? Why am I the right person to do this?

Learning objective: To get everyone on the right track with their research projects.
Min. number of words: 30
Estimated time to finish: 2 hours

Task 01B. Review three forum submissions

After you have submitted your own idea to the forum 01 "Planning a research topic", **respond to three other research topic ideas on that forum**. The ones that you respond should not have three responses already. The idea is that everyone should get at least two responses.
1. In your response, evaluate whether the other course participant's research idea is:

- **About computing** (search ACM Digital Library or IEEExplore for related research studies.
- **Empirical** (if the research idea can be done by only reading other people's research studies and doing some summary or comparison between them, that research is not empirical research.)
- **Small** (can the study be done over 8 weeks?)
- **Doable** (can the participant have access to the data and other resources required by the study?)
- **Does the study require contacting EWU staff members, people in private companies, minors, schools, other public institutions, or other similar groups**

(if it does, the study is not eligible -- this is a practice study and we don't practice on real stakeholders.)

2. Ask two "how" questions and one "why" question about the study: "How are you going to ...", "How is X going to be...", etc.

3. Go to ACM and IEEE's digital library pages linked above, **find at least two** research paper that is well relevant to what the other course participant proposed as his/her research topic, and provide a hyperlink to that research report in ACM/IEEE digital library.

Learning objective: Improved analytical skills and evaluation of other people's work on the same criteria used in one's own work.
Min. number of words: 20 per post
Estimated time to finish: 1 hour

Sample Post and Review 1

Password security awareness amongst DSV students
by Magnus Nord - Thursday, 6 November 2014, 15:52

What am I really interested about?
Information Security

What do I want to know better or understand better?
How well DSV students follow general password policies on their personal passwords.
How well DSV students know the policies surrounding the passwords they use
What DSV students think about different types of password complexity

What questions do I think are really important to be solved?
What is the best type of complexity to use on passwords

Why is this going to be interesting or important to others?
It can help designers of security systems to tailor their password systems after what will be the best in their case
It can open up innovation regarding what types of passwords should be allowed

Who will be interested in reading about what I found?
Developers of password systems
Researchers in the information security field

Does this reveal something that we didn't previously know?
Similar studies regarding the strength of passwords have been made before, but from what I can tell not with such a computer knowledgeable group like students at DSV.

Why am I the right person to do this?
I have a very active interest regarding information security and passwords

Re: Password security awareness amongst DSV students
by Aikaterini Sofou - Thursday, 6 November 2014, 18:46

Hi Magnus,
Interesting topic!
About computing? Information security is definitely a computer related issue.
Empirical? Yes since you will collect your data from DSV students.
Small? Yes, it is a study that can be conducted within 8 weeks.
Doable? Yes, this study is doable for a DSV student.
Does the study require contacting DSV staff members, people in private companies, minors, schools, other public institutions, or other similar groups?
No. You need data from DSV students.
I would like to ask how you are going to collect your data. How important do you think it is to follow password policies? What are the potential benefits of your study?
Hyperlinks:
http://dl.acm.org/citation.cfm?id=2435349.2435395&coll=DL&dl=GUIDE&CFID=595580203&CFTOKEN=68271030
http://dl.acm.org/citation.cfm?id=1265984.1266060&coll=DL&dl=GUIDE&CFID=595580203&CFTOKEN=68271030
King regards,
Aikaterini

Reply: Password security awareness amongst DSV students
by Daniel Hallberg - Friday, 7 November 2014, 12:15

Hi Magnus!
Interesting topic you have chosen, it will be interesting to view the results from your study.
About computing: Yes your study is within the area of computing.

Empirical: It can be an empirical study.

Small: yes the study can be achieved during 8 weeks.

Doable: It is doable and possible to receive data surveys.

Eligible: the study does not require any contact with institutions, hence it is eligible. You should also be able to get in contact and get enough surveys from students.

How are you going to perform the study, by surveys I guess? Or can other methods also be useful complementing the research, like semi-formal interviews in groups to find out more then only by surveys.

How are you going to find out how the best complexity passwords are made?

Why do you think students at DSV has better track of which passwords that are better to use? My own opinion after studying the password structure is that it was not quite as I thought. See the link to the article below called, Of Passwords and People: Measuring the Effect of Password-Composition Policies, very interesting reading! Knowing what password policies an organization demand also reveals some information about its entropy.

Some useful papers that is related to the topic and maybe useful:

Effect of grammar on security of long passwords
http://dl.acm.org.ezp.sub.su.se/ft_gateway.cfm?id=2435395&ftid=1341396&dwn=1&CFID=452690669&CFTOKEN=35587339

The Science of Guessing: Analyzing an Anonymized Corpus of 70 Million Passwords
http://ieeexplore.ieee.org.ezp.sub.su.se/xpl/articleDetails.jsp?tp=&arnumber=6234435&queryText%3DThe+science+of+guessing%3A+analyzing+an+anonymized+cor-pus+of+70+million+passwords
Of passwords and people: measuring the effect of password-composition policies
http://dl.acm.org.ezp.sub.su.se/ft_gateway.cfm?id=1979321&ftid=964803&dwn=1&CFID=452690669&CFTOKEN=35587339

How Does Your Password Measure Up? The Effect of Strength Meters on Password Creation
(you get access to the pdf by pressing link to Publisher Site)

http://dl.acm.org.ezp.sub.su.se/citation.cfm?id=2362793.2362798&coll=DL&dl=ACM&CFID=452690669&CFTOKEN=35587339&preflayout=flat
Very interesting and good luck in the project!
/Daniel

Sample Post and Review 2

Use of social media within an organization
by Andreas Brovig - Wednesday, 5 November 2014, 23:49
Today most employees in a company are used to social media, but still many companies do not offer any of these opportunities that lies within the concept of a social media. I want to take a look into different opportunities implementing features from social media into a traditional company intranet, and document the response from the users of these potential features. Could new social media features give the users more motivation for taking part into the company's internal communication strategy and could social media actually be a part of it?

What?	*Why?*

What am I really interested about? I am interested in seeing companies making themselves more relevant to their employees by using the technologies and technological principles that the employees use during their spare time, within social media. **What do I want to know better or understand better?** What technologies that could be used. If there are already developed systems that could be used for internal use only, if established social media like Facebook or Twitter could be integrated in any way for the internal communication and what advantages this could bring to the company. **What questions do I think are really important to be solved?** Are there social media features that easily could be integrated into a company's existing intranet? What options does a company have using existing social media that still handle the privacy and business secrets.	**Why is this going to be interesting or important to others?** Every company or organization needs to be an attractive employer and the use of social media features or integration will both make the employer more attractive and also this will increase the incitements for receiving the internal information. **Who will be interested in reading about what I found?** Everyone who is in a managing position in any organization that have an internal channel for communication/intranet. **Does this reveal something that we didn't previously know?** This is a new field and even though some may be using social media features internally already, I am convinced that many organizations still do not. This research will identify how a company successfully can adapt and start using social media features to increase the business effects and internal efficiency and motivation. **Why am I the right person to do this?** I am very interested in human aspects of information systems and how you could increase both the effect and the incitement of using a system, by adding features of or integrations with social media. I have relevant experience from programming intranets during a time period of more than 10 years. I have also had the role of implementing and improving intranets as an editor/administrator.

Re: Use of social media within an organization
by Hillevi Hedberg - Thursday, 6 November 2014, 00:52

About computing?

The usage of Social Media within Organizations is within the computing field. A brief search on the ACM Digital Library give many suggestions for documents on the topic.

Empirical?
Yes, the research could be done by performing a survey or interview, to ask companies which Social Media tools they are currently using.

Small?
Depending on the decided question and target audience the research could be small. For example, focus on Social Media used by organizations such as consulting firms located in Kista and decide on only **one** question to answer.

Doable?
Yes, if organizations willing to give quick responses are included in the study. Typically, organizations will probably agree on answering surveys which are not too long or complicated. The answers should be kept short, preferable pre-defined answers to select from (a notice from own experience).

Is the study eligible?
Yes. It does not require contact with public institutions such as schools, or other similar groups.

Questions:
Why do you think the use of Social Media will make an employer more attractive?
Why are you convinced that Social Media features can be used to increase a business internal efficiency?
How are you going to find already developed internal Social Media tools used within organizations?

How are you going to find organizations for the study?

Related Paper:
http://dl.acm.org/citation.cfm?id=2116261.2117073&coll=DL&dl=GUIDE&CFID=452184410&CFTOKEN=30496532

Re: Use of social media within an organization
by Kian Rozi - Thursday, 6 November 2014, 10:19

I find that this topic is related to **computing** and can be conducted **empirically** within the given **time** frame of eight weeks. The study is **doable** and is addressing an interesting and **relevant problem**. You should have no problems in accessing required **resources**. One problem that I do see regards the prerequisite regarding the involvement of "**real stakeholders**". Strictly interpreted the study can be considered to be not eligible due to this criteria.

How have you planned to collect data in order to be consistent with the criteria mentioned above (involvement of stakeholders)?
How do we know for a fact that companies does not already realize/implement the opportunities of a social media?
Why do you assume that technologies used in the employees' spare time will be valued the same way by the employees at work as well?

I would also like to suggest that you, when formulating the research question, try to narrow it down to something very specific within the topic. One example is to investigate how many companies that does incorporate social functions through enterprise systems and how many that implements social functions by their own design. This approach would also decrease the level of interaction with "real stakeholders" since it makes it possible to swiftly document response through shorter and faster data collection methods, such as a survey.

I am familiar with the concept of some ERP-systems or standalone CRM-systems that have incorporated internal social media functionality. This article highlights some important factors related to the topic.
http://dl.acm.org/citation.cfm?id=2093669.2093679&coll=DL&dl=GUIDE&CFID=452332044&CFTOKEN=84602243
Good luck on the study and I really like the idea!

Re: Use of social media within an organization
by Ahmed Dawood Salman - Thursday, 6 November 2014, 12:32

Hi Andreas
The social media has become part of the social reality and economic and political in the world and essential influential and a major contributor in making events and be influencers in these methods have become part of the change-makers in their communities and must deal with this reality wisely and creativity and positive spirit to invest with benefit of our communities

How to evaluation the usefulness and effectiveness of social media for companies?
How to maintaining communication with staff?
Why use these methods helps to achieve the goals they seek?

1. Facilitating intra- and inter-company interaction through the usage of social media platforms
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6596536&queryText%3Dsocial+media+in+companies

2. Social media for software engineering
http://dl.acm.org/citation.cfm?id=1882362.1882370&coll=DL&dl=GUIDE&CFID=452385611&CFTOKEN=91996055

Assignment 02. Propose a Research Problem, Aim and Objectives

- Task 2A. Post your Research problem, Aim, Objectives (with focus and feasibility) in this forum (one post per group). **Post the link of your post in assignment 2a**.
- Task 2B. Then review at least two forum posts by other groups (every group member should review at least two posts from other groups). **Post the link of your reviews in assignment 2b**.

The second stage after finding a research topic (which was done last week) is to define the aims and objectives for the mini-project. Make sure that your project aims are focused and feasible for a 8-week study working half time (and shortly describe the focus in terms given in this week's learning material)! This week you should write down a proper version of your research problem (started last week), and derive aims and objectives from that problem.

Research studies are done because there is a problem: maybe something doesn't work as it should, maybe we don't know much about some phenomenon, maybe there is not enough information for important decisions, or maybe we do not know how to build a system without using too much resources.

The ***research problem*** is the main driver of a whole research project: If formulated well, it keeps reminding the researcher about the right direction. If formulated poorly, it lets the researcher aimlessly wander around the research landscape.

In a research study, ***research aim*** describes what the research study is aiming to achieve, and ***research objectives*** are measurable, concrete, achievable goals that contribute to meeting the research aim. Once the problem is well stated, research aims and objectives follow almost automatically from them.

Each research study needs to also be limited so that the study does not become a life-long project: they need to be ***focused*** *and* ***feasible***. This week's readings and assignments are concerned with these basic building blocks of research studies.

Watch the recommended videos for this week and Propose your problem statement, aim and objectives. For aims and objectives, you can use the verbs described in videos, or you can use other verbs if they are better suited for what you want to achieve.

Videos and slides

1. How to frame a research problem
2. How to frame research aims
3. How to frame research objectives
4. Focus and feasibility
5. Working with literature
6. Extra video: "*Designing a doable study*"
7. Extra video: "*Literature quality*"
8. Extra video: "*Peer reviews*"
9. Extra video: More about peer reviews

*Videos are available in the link given in the **Resource Location** section. The videos and slides are presented and prepared by Matti Tedre, Associate Professor, Department of Computer and Systems Science (DSV), Stockholm University.*

Readings

1. Chapters 2 and 5 in Johannesson & Perjons (2012) (Knowledge types and forms; Describing a problem in design research) (21pp.)
2. Pages 13-24 in Randolph (2008) (Methodological factors in educational technology research and development) (12pp.)

***The reading materials** and **books** are available in the link given in the **Resource Location** section.*

Task 02A. Propose your research problem, aims, and objectives

1. Describe the research problem (min. 250 words). Last week you should already have checked up whether the ACM and IEEE databases have literature on the topic, so you should already have 2-3 references already now.
2. In one sentence, state the broad aim of a research study that contributes to solving that research problem. (You should have **one** aim).
3. In two or three sentences, state the concrete objectives of a research study that contributes to solving the research problem. (You should have **one or two** objectives because this is a mini-study.)
4. Check your writing with the given checklist.
5. Write your *whole* text in forum 2. "Propose a Research problem, Aim and Objectives".
6. Submit the link of your post in the appropriate assignment (Assignment 02A: One post per group, every group member needs to click the submit button).

Assignment Information

Learning objectives: 1) To improve ability to describe a research problem; 2) To improve ability to propose an aim and objectives for a research project.
Min. number of words: 250
Estimated time to finish: 4 hours

Task 02B. Review Two Submissions

After you have submitted your own work to forum "Propose a Research Problem, Aims, and Objectives" and self-evaluated your work, review two other groups' work using the same checklist you used for self-evaluation. Submit the two reviews of other groups' assignments by replying to them in the correct forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.

Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers (see the videos about peer reviews). They are learning, just as you are. You may describe how your answer differed from theirs, and what you expected to see.

When you have done the two reviews, use the online submission tool below to ***submit hyperlinks to your two reviews, so that we can evaluate your submissions***.

Learning objectives: 1) To improve critical reading, evaluation, and feedback skills.
Min. number of words: 250 per review
Estimated time to finish: 4 hours
Grading: 0-100 points. Completion of two reviews will earn 50 points each. Zero points is given where it is obvious that a participant has completed a review without examining the other participants' text. Reviews that offer little or no feedback for improving the text will get a reduced score. Just ticking off items from the checklist ("yes, yes, no, yes") will get much reduced score. Good advise, ideas, constructive feedback, and additional perspectives for the other participant improve the score.

	Checklist for Assignment 02	
01.	The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing).	**Yes/ No**
Make sure that your references are really scientific! (Remember that web pages, newspaper articles, blogs, and other non-scientific work do not count! Also remember that the topic should be about computing, so similar work should be available in ACM or IEEE databases.)		
02.	The problem statement is well justified (it's interesting from societal / scientific	**Yes/**

	perspective and/or there's a gap in literature)? It looks like this problem really is a problem for the scientific community, the public, or other people aside from the researcher?	**No**
Remember that *the problem statement has to be written clearly, too. It's not enough to be interesting and important if no-one else understands the brilliance and importance of solving this problem.* *(The optimal case is that you can quote someone saying that it is a problem, although we rarely get that optimal case.)*		
03.	This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me").	**Yes/ No**
Remember that *this section should be factual text, not about your opinions. Research papers try to avoid personal expression and personal pronouns. In some style books you can use "I" to refer to the work you did ("In the first three interviews, I emphasized the original problem statement.") But still more often the old-fashioned style is to use passive tense ("In the first three interviews, the original problem statement was emphasized.").* *The modern "I" is easier to read than the traditional passive tense, and many like it more.*		
04.	Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling. The problem statement convinces the reader that this is worth studying.	**Yes/ No**
Remember that *the better the reader is convinced that it really is a problem, the more likely he/she will continue reading. No-one likes to read research reports that don't seem to be worth it, or that are studying something irrelevant or unimportant.*		
05.	The research aim is written on a general level. (Remember that *aims* typically don't yet tell the reader any measurable, concrete ideas about how the study should be done. Hence, verbs like develop, describe, evaluate, design, and explore are often used. Those verbs are highly recommend here, too)	**Yes/ No**
Remember that *the aims are just general descriptions to give the reader an idea of how to read the rest of the paper.*		
06.	Objectives use *active verbs* to tell how exactly will this study meets the aim.	**Yes/ No**
Remember that *the objectives should be so concrete that we can actually tell whether you managed to meet the objectives. Try to think of possible outcomes of your study, and whether what you'd need to do to meet your objectives. If it's hard to think how to meet the objectives, they may be too broad or too ambiguous.* *If you have already some idea of how to meet those objectives, things should be going well here.*		
07.	The aim responds directly to the problem.	**Yes/ No**

Remember that *in a well planned study it is easy to see how meeting the aim will contribute to solving the research problem, There should be a clear connection between the aim and the research problem. One of the common mistakes in research papers is that the "background" section describes a problem well, and the aims look good too, but when you look closely, the aims don't really address the problem.* *If things change later on in the study, it's really important to revisit the problem-aims relationship and make sure that they're still well aligned.*		
08.	The objectives contribute directly to the aim.	**Yes/ No**
Remember that *In a well done study it is easy to see how meeting the objectives helps to fulfill the research aim. The fit between the objectives and the aim should seem natural, and it's often not a problem if it looks a bit too simplistic. Clarity is deceivingly simple.* *It's really important to have the objectives in line with the aim. Don't worry if it looks even a bit repetitive, as in those cases in real-life studies either aims or objectives are often dropped. In this study you should have both, though.*		
09.	The text passes the word processor's spell-checking option. (Really, please do this!)	**Yes/ No**
Make sure that *there are no spelling and grammatical mistakes. It's amazing how many people don't use the spell-checking option on their word processor, as witnessed by the large number of simple spelling errors that could have easily been avoided.*		
10.	The research study (aims and objectives) looks like focused enough for a 25 marks mini-project of a 3.0-credit course, and can be finished in 8-weeks. It doesn't seem to be too broad, too small, too ambiguous, or too vague. It's clear to see what the research tries to do.	**Yes/ No**
Please try to *read your text as an outsider every now and then. It's easy to become too attached to one's own text and think that everyone sees the logic behind the text.*		

Sample Post and Review 1

What makes people buy an app?
by Jessica Eklund Kavtaradze - Wednesday, 12 November 2014, 23:37

Problem:

In most developed countries today the majority of people own and use different brands of smartphones. In these phones the user can buy apps in different so-called app stores and this has resulted in that app developing has become a major industry. Even though the pricing level of apps a relative low, usually from $0 to $8, the revenue potential is large (Wanzel et al., 2012). There are many research papers today regarding the technical aspects of developing an app, but few deal with questions concerning why users choose to buy a specific app (Kim et al., 2011).

When developing an app the purpose is usually to generate revenue and two dominating ways are used in app stores, initial price when downloading the app or by having advertisements in the app. To generate revenue the app must be downloaded by the users and here the problem arise. What is it that makes people choose one app instead of another similar app if no pre-existing knowledge existed before the app purchase. In app stores the user can, in the majority of apps, see pictures of how the app looks, read a short description of the functionalities and read other users reviews (Pagano andMaalej, 2013). This information is typically the only available information and in this sense the potential user has to form their decision based in this information. There are limited research about which information makes the user buy the app and that is a problem because it does not matter how many great functionalities the app has if no one decides to buy it. There is a lack of knowledge about the factors that affect the customer to buy a specific app.

Aim:
This research aims to describe the factors that makes people buy one app instead of another similar app from an app store.

Objectives:
To classify what factors that are important when deciding on which app to choose.
To distinguish what factors that makes people interested in paying for an app.

References:
Stefan Wenzel, Wolfgang Faisst, Christoph Burkard and Peter Buxmann. 2012. *New Sales and Buying Models in the Internet: App Store Model for Enterprise Application Software.*
http://rzbl04.biblio.etc.tu-bs.de:8080/docportal/servlets/MCRFileNodeServlet/DocPortal_derivate_00027468/Beitrag294.pdf
Hee-Woong Kim, Hyun-Lyung Lee and Jung Eun Son. 2011. *An exploratory study on the determinants of smartphone app purchase.*
http://iceb.nccu.edu.tw/proceedings/APDSI/2011/web/session/anexploratorystudy.pdf
Pagano, D and Maalej, W. 2013. *User feedback in the appstore: An empirical study*
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6636712&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6636712

Permalink

Re: What makes people buy an app?
by Hawre Stark - Thursday, 13 November 2014, 09:45

1 The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing).
Yes it does.
2 The problem statement is interesting from the societal perspective. It looks like this problem really is a concern for the public, or other people aside from the researcher.
Yes it's. It may be concern for the developers and companies.
3 This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me").
It doesn't.
4 The problem statement appears to be worth studying.
The topic is interesting and worth studying.
5 The research aim is written on a general level.
Yes it does. The level is general.
6 Objectives use active verbs to tell how exactly will this study meets the aim.
Yes it does.
7 The aim responds directly to the problem.
The aim responds well and directly to the problem.
8 The objectives contribute directly to the aim.
Yes it does.
9 The text scores 74 of 100 the word processor's spell-checking option: Grammarly found 14 critical writing issues.
Not sure it was used, found minor errors (4), otherwise the text is well written.
10 The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project.
There are many platforms that got App stores. Probably choosing one platform (Apple, Android or windows) will make it more focused.

Permalink | Show parent

Re: What makes people buy an app?
by Vu Nguyen - Friday, 14 November 2014, 23:38

Hi Jessica,
A very well-defined problem statement with clear aim and objectives. Below are some of my comments:
1. The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing)?

⇒ Yes, the problem statement cites 3 different academic research paper. These papers are all related to app store and e-commerce, which are very close to your topic.

2. The problem statement is well justified?

⇒ Yes. As you mentioned, there is a gap in literature about which information makes the user buy the app.

3. This text doesn't use personal pronouns and it does not use personal expressions?

⇒ No personal pronoun or expression is used in this problem statement.

4. Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling?

⇒ Yes. As the mobile application market is evolving, the factors affecting the choice of customers is highly concerned by both developers and sellers.

5. The research aim is written on a general level?

⇒ Yes. The research aim only provide an initial idea to the reader. No specific research procedure is described in details yet.

6. Objectives use active verbs to tell how exactly will this study meets the aim?

⇒ Yes. Active verbs "classify", "distinguish" are used for the objectives of the research.

7. The aim responds directly to the problem?

⇒ Yes. The problem is the lack of knowledge on factors that affect mobile app purchases, and the aim is to describe these factors.

8. The objectives contribute directly to the aim?

⇒ Yes. There is a natural alignment between the aim and the objectives.

9. The text passes the word processor's spell-checking option?

⇒ Yes. Although the word processor highlights the word "functionalities" (I think that the word processor only accepts the singular form of this noun), this is not a major spelling problem.

10. The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project?

⇒ Yes. It is feasible to conduct this research for a 7.5 credit course mini-research.

All the best to your project,
Vu Nguyen

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Re: What makes people buy an app?
by Mohammad Saiful Islam - Saturday, 15 November 2014, 00:21

Hi Jessica!

Here is my peer review of your project outline.

1.The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing).

Yes, you have chosen relevant research paper for your research topics.

2.The problem statement is well justified (it's interesting from societal / scientific perspective and/or there's a gap in literature)? It looks like this problem really is a problem for the scientific community, the public, or other people aside from the researcher?

Yes, it's a problem and results will help the IT industry to focus on this particular area.

3.This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me").

Yes, it does not.

4.Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling. The problem statement convinces the reader that this is worth studying.

Yes, this is worth studying and hopefully the outcomes will play a significant role in the app market.

5.The research aim is written on a general level.

Yes, but I guess the sentence "This research aims to describe" need to rephrase little bit. Its too common idea to say "aims to describe". Generally, every research has a aim. So, it is better to write "This research describes".

6.Objectives use *active verbs* to tell how exactly will this study meets the aim.

Yes, it does.

7.The aim responds directly to the problem.

Yes, it does.

8.The objectives contribute directly to the aim.

Yes, it does.

9.The text passes the word processor's spell-checking option. (Seriously, why aren't people using it!)

Yes, it does.

10.The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project. It doesn't seem to be too broad, too small, too ambiguous, or too vague. It's clear to see what the research tries to do.

Yes, it does.

Good Luck!

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Re: What makes people buy an app?
by Md Adnan Hossain - Sunday, 16 November 2014, 14:50

its very realistic topic but not Eunice. i think some related research has been done before.
aim: i thin it is well done aim and very clear to reader.
objective: objective is not specific. it only classify? it should be more specific.
proposed object: why and what factors developer should add in an app that make people interested in paying for.
references are very good.
thanks
ADNAN

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Re: What makes people buy an app?
by Lennart Peck - Sunday, 16 November 2014, 22:58

Dear Jessica,
I will be quite brief because overall I think it is very well formulated.

1. The problem statement cites at least three research papers:
Yes you do and from what I can see they are relevant as well

2. The problem statement is well justified?
Yes, I think so. Possibly you could be more specific as to whom this constitutes a problem.

3. This text doesn't use personal pronouns and it does not use personal expressions?
No it is "unpersonal" in the way it should be.

4. Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling?
Yes, in fact. Being a user of apps I also started to ask myself the same question.

5. The research aim is written on a general level?
Yes, it expresses what you want to get at while still leaving it open to chose different foci and approaches.

6. Objectives use active verbs to tell how exactly will this study meets the aim?
Classify and distinguish: Yes!

7. The aim responds directly to the problem?
Yes! It obviously not solves the problem as such, but it is clearly relevant for solving it.

8. The objectives contribute directly to the aim?
Yes, classify and distinguish can be ways of describing the subject matter.

9. The text passes the word processor's spell-checking option?

Yes, or you are simply writing very good English.

10. The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project?

I think it looks focused enough for a "mini-project". What is somewhat unclear to me if the objectives require empirical research that can be done within the time frame. How exactly will you classify what factors that are important and distinguish what factors make people interested in buying? But perhaps you already have an idea and I suppose it is something that we will get into further ahead in this course. Again: Really good as far as I can judge.

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Re: What makes people buy an app?
by Ian Maclean - Sunday, 16 November 2014, 23:39

Hi Jessica,
Please find my review below:

The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing). **It does. I think it's a very relevant and good question to ask. It would be even better with one or two additional sources. Also why isn't the question of how to price an app addressed? Maybe the problem is that the apps are priced too high.**

The problem statement is well justified (it's interesting from societal / scientific perspective and/or there's a gap in literature)? It looks like this problem really is a problem for the scientific community, the public, or other people aside from the researcher? **This problem is primarily directed at app developers and marketers that want to capitalize and profit from their hard work. Other interests from the academic psychology community can also be argued.**
This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me"). **No it doesn't. good job!**
Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling. The problem statement convinces the reader that this is worth studying. **Yes, absolutely, i've had this problem. Yet, i don't consider myself an early adaptor and thus prefer to let other people use and test products before I purchase. I rely on user reviews.**
The research aim is written on a general level. Yes, although it doesn't go into much detail about how the data will be collected? what kind of measurements will be used? What factors will be measured?
Objectives use active verbs to tell how exactly will this study meets the aim. **Yes, words like describe, classify and distinguish.**

The aim responds directly to the problem. **Yes. I am wondering why this is a problem for the pubic though. it seems like it's a problem for just app developers and their financial backers**. The objectives contribute directly to the aim. **Yes, the aim is to describe, classify and distinguish.**

The text passes the word processor's spell-checking option. Only one small discrepancy. Problem arise vs. problem arises.
The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project. It doesn't seem to be too broad, too small, too ambiguous, or too vague. It's clear to see what the research tries to do. **I think it might be too ambitious. Too complex. It may be hard to gather quantifiable data. It may be too opinion based and not very useful for the public at large. Overall though, very interesting and relevant topic. Good luck !!**

-Ian

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Re: What makes people buy an app?
by Ranil Peiris Colombage - Friday, 21 November 2014, 12:34

Hi Jessica
Thanks for selecting very interesting and important topic. Your aim and objectives and very clear and please continue.
This is not a question, but think about how do you select a sample to represent whole application in general? If you think it is too much work, select a specific context and a group or groups since you have limited time and resources (sampling, data collection etc).
Please send me a message if you need further clarification.

Thank you
Ranil

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Sample Post and Review 2

Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures
by Filip Johansson - Wednesday, 12 November 2014, 14:19

Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures

The use of the Internet and web-enabled computing devices has grown dramatically in recent years. Today, these two phenomenons play an important role for both business and our personal lives. [1] While the Internet has led to new ways of conducting business and catalyzing the corporation production process [2] it has also opened up a door to a new way of distraction and deviant workplace behavior [1, 2]. Namely, non-work related Internet usage at work. One survey found that employees, on average, waste almost two hours per eight our workday and the by far most common distraction is using the Internet for non-work related matters [3]. Furthermore, it has been estimated by researchers that non-work related internet usage reduces productivity by 30-40% [4] and corporate America spends $544 billion annually on wages where no work actually is done [3]. To deal with this problem, companies implement countermeasures such as policies, electronic monitoring and other control mechanisms to restrict the usage of Internet at work [1, 5]. Previous studies has examined the occurrence of non-work related internet usage at work [6, 7] and possible prevention mechanisms [1, 5]. At the same time, studies report that non-work related internet usage can have positive impacts on the employees' [9, 10] and additionally that some prevention methods that is implemented can have negative impacts on them [11]. However, existing studies to date, provide little insights on the perceptions that the employees has on the possible prevention mechanisms of non-work related internet usage and if these perceptions vary among the type of work the employee is involved in. A greater understanding of these perceptions could help companies in dealing with the issue of non-related internet usage at work.

Aim: Given the non-work related internet usage at work severe impact on employers and the impacts that the possible prevention mechanisms has on the employees, it is of importance to evaluate the perceptions of the employees in regards to the prevention mechanisms that companies could implement.

Objectives:

- To explore employees' perceptions of three different prevention methods for non-work related Internet usage at work (policy, monitoring, traffic blocking)
- To compare the employee's perceptions in regards to their type of work (knowledge work or non-knowledge work).

References (articles from ACM Digital Library is marked with a *)

1. Glassman, J., Prosch, M., & Shao, B.M. 2013. To monitor or not to monitor: Effectiveness of a cyberloafing countermeasure. *Information & Management (2014)*

2. Manrique de Lara, P. Z., Tocaronte, D. V. & Ting Ding. J-M. 2006. Do current anti-cyberloafing disciplinary practices have a replica in research findings? *Internet Research. Vol. 16, No. 4, pp. 450-467.*

3. Malachowski, D. & Simonini, J. 2006. Wasted Time At Work Still Costing Companies Billions in 2006. (Article) salary.com.
<http://www.salary.com/wasted-time-at-work-still-costing-companies-billions-in-2006/>

* 5. Henle, C. A., Kohut, G. & Booth, R. 2009. Designing electronic use policies to enhance employee perceptions of fairness and to reduce cyberloafing: An empirical test of justice theory. *Computers in Human Behaviour. Vol. 25, pp. 902-910.*
* 6. Blanchard, A. L. & Henle, C. A. 2007. Correlates of different forms of cyberloafing: The role of norms and external locus of control. *Computers in Human Behaviour. Vol. 24, pp. 1067-1084.*
7. Garrett, K. R. & Danzinger, J. N. 2008. Disaffection or expected outcomes: Understadning personal Internet use during work. *Journal of Computer-Mediated Communication. Vol 13, pp. 937-958.*
9. Beugré, C. D., & Daeryong, K. 2006. Cyberloafing: Vice or Virtue? In *Emerging Trends and Challenges in Information Technology Management, Vol 1 & 2,* Idea Group
* 10. Lim, V. K. G. & Chen, D. J. Q. 2009. Cyberloafing at the workplace: gain or drain on work? *Behaviour & Information Technology Vol. 31, No. 4, pp. 343-353*
11. Alder, G. S., Noel, T. W. & Ambrose, M. L. 2006. Clarifying the effects of Internet monitoring on job attitudes: The mediating role of employee trust. *Information & Management. Vol. 43, pp. 894-903.*

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Re: Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures
by Klas Gustavsson - Wednesday, 12 November 2014, 15:44

Hi,

Interesting subject and well written. Here is my evaluation:

1 The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing).

You have cited up at least ten research papers, and most seems to be journals, which is good. The papers are all relevant and in the subject of cyberloafing and other countermeasures.
The only drawback that comes to my mind is the use of referencing system. In the communication module, they recommend to use Harvard style, which might be something to comply in the final submission.

2 The problem statement is well justified (it's interesting from societal / scientific perspective and/or there's a gap in literature)? It looks like this problem really is a problem for the scientific community, the public, or other people aside from the researcher?

I certainly see the problem, both from my own experience, but especially from the problem statement described. As mentioned, companies are loosing a lot of money because of cyberloafing, and therefore it should exist an interest in exploring the employees perception from the companies, and therefore from the science field.
I see the gap in literature if there isn't any literature describing the employee's perception and perhaps reactions to these countermeasures. Although, I believe that some cited papers already have investigated the effects and therefore also the perception, because the perception is sometimes the root cause of behavioral change. What I mean is that one important part of countermeasure is getting the employees aware, and get them to think about their behavior. Not to capture them doing something wrong.
I am probably just misunderstanding the word perception, sorry if that's the case. Otherwise, there are some papers you are citing that mentions the effects and therefore should treat the perception.
Found another that might be useful:
The effects of sanctions and stigmas on cyberloafing
<http://www.sciencedirect.com.proxybib.miun.se/science/article/pii/S0747563212003 10X>

3 This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me").

No, it's objectively!

4 Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling. The problem statement convinces the reader that this is worth studying.

As told before, yes. The problem stated is well grounded, and build up by an aim that (according to the problem statement) is missing in the literature. Finally the objective, where the aim is translated in to how it shall be fulfilled, describes how to achieve the aim and fill the gap. Because of the clear connection throughout the problem, aim and objective the reader is left with a positive feeling about the subject.

5 The research aim is written on a general level.

Yes, I think so.

6 Objectives use *active verbs* to tell how exactly will this study meets the aim.

The verbs are explore and compare and are both good when stating objectives. They also suit the chosen subject and study.

7The aim responds directly to the problem.

The aim fills the described gap in the problem statement. I saw something about avoiding the word impact, which might be worth considering.

8The objectives contribute directly to the aim.

You have two well-formulated objectives that help fulfilling your aim perfectly well.

9The text passes the word processor's spell-checking option. (Seriously, why aren't people using it!)

Good language, the only section where you could consider revising (probably because of my inability in English) is your aim. It's a bit complicated and could be shortened down.

10

The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project. It doesn't seem to be too broad, too small, too ambiguous, or too vague. It's clear to see what the research tries to do.

I can't really tell. Because there aren't any information about how and to whom the investigation shall be made on. But there are well-focused objectives, so as long as you get in touch with an appropriate sample group, it should be doable.

Regards,

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Re: Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures

by Filip Johansson - Wednesday, 12 November 2014, 18:53

Hi!
Thanks for your comments. They are valuable and I will take them into account. Already have some ideas on how to make things a little bit clearer and maybe how to get a suitable sample group. In regards to the referencing I am well aware that my style of referencing above is not according to the requirements of the mini-project. I actually used proper Harvard referencing when I first wrote it but changed it before I submitted it since I thought that this style would make my text a bit shorter for the moment. I will not use this style when handing in the actual mini-project.
Thanks again for your comments!

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Re: Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures
by Lucas Barber - Wednesday, 12 November 2014, 16:10

Hi Filip,
VERY interesting topic, I hadn't considered that there would even be research on these ideas, though it is a challenge that nearly everyone faces.

1. **The problem statement cites at least three research papers that are at least somewhat relevant (on a similar topic and on computing).** Well cited, well referenced studies.
2. **The problem statement is well justified (it's interesting from societal / scientific perspective and/or there's a gap in literature)? It looks like this problem really is a problem for the scientific community, the public, or other people aside from the researcher?** The subject of cyberloafing seems to be well researched, but the references seem to point to a lack of understanding of the direct effect on employees of comparative solutions.
3. **This text doesn't use personal pronouns ("I, we, us, me") and it does not use personal expressions ("I believe, it looks like to me").** None detected.
4. **Reading the problem statement leaves one with a "Yes, this is indeed a problem" feeling. The problem statement convinces the reader that this is worth studying.** Definitely, though that may be my personal reaction to a topic I grapple with regularly.
5. **The research aim is written on a general level.** Aim is sufficiently general.
6. **Objectives use *active verbs* to tell how exactly will this study meets the aim.** Explore and compare are perhaps a bit general, though presuming they refer to surveys, the objectives are quite specific about what is to be surveyed.
7. **The aim responds directly to the problem.** Aim responds directly to the problem, marrying existing research with the aim of this research.
8. **The objectives contribute directly to the aim.** Objective is quite clear.

9. **The text passes the word processor's spell-checking option. (Seriously, why aren't people using it!)** My spell check only caught "understanding" in the citations, and phenomenons, which could arguably be phenomena, but that's a bit pedantic.
10. **The research study (aims and objectives) looks like focused enough for a 7.5-credit course mini-project. It doesn't seem to be too broad, too small, too ambiguous, or too vague. It's clear to see what the research tries to do.** Depending on the scope of the exploration and comparison, this task could be a bit daunting, but I believe it is possible to keep it doable.

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Re: Non-work related Internet usage at work - Evaluating workers perceptions of possible countermeasures
by Filip Johansson - Wednesday, 12 November 2014, 18:55

Hi!
Thanks for your comments. I understand what you mean and I will try come up with a good limitation and focus try focus the study even more. At this moment I am thinking of age-groups, work types or gender.
Thanks again!

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Assignment 03. Formulating Research Questions

Once the objectives of a research study are clear, they are made into research questions: "What", "Why", "How", and so forth. In B.Sc. and M.Sc. theses there usually is only one research question, usually divided into a few sub-questions. (Design research studies may be an exception to that rule.)
First, one should know what kinds of research questions arise from specific research objectives. Secondly, one should know how does a good research question look like - and how does a bad one. Third, one should know how scientific literature and theories are typically used in research studies.
The literature this week starts from Randolph's exposure of major types of research questions in one branch of computing. Computing is a broad discipline, and different branches ask different questions (take cryptography, computational science, and artificial intelligence, for instance). In the next readings Denscombe explains research strategies, which are broad overviews unlike methods, which are procedures for specific actions. Randolph talks about research approaches following Creswell, who is an authority figure in qualitative methods. Johannesson and Perjons present strategies from design research point of view. The two optional readings from Denscombe discuss two strategies commonly used in human-oriented IT/IS research: case study strategy and survey strategy. In computing other common strategies are experiment-based research and various design approaches.

Studies in this course are not full-fledged in many ways. Regarding the topics in this week, in this course it is important to *know* what a research strategy is, but no description of strategy choice is required for the projects in this course. (It's helpful to have one, though!) In addition, the videos talk about the different roles *a theory* can play in a research study. The small practice studies in this course are usually not theory-driven (e.g., testing a theory, using a theoretical / conceptual framework, etc.), but it is typical that larger studies must have a strong theoretical grounding.
In addition to the other tasks, please work on your introduction section (look for more relevant references and broaden its scope.)

Readings

Read the following articles first.

1. Pages 24-39 in Randolph (2008) (Five major categories of educational technology research questions) (16pp.)
2. Pages 3-9 from Denscombe (2010) (What are research strategies) (7pp.)
3. Chapter 3 in Johannesson and Perjons (2012) (Research Strategies and Methods) (8pp.)
4. Chapter 2 in Randolph (2008) (Research approaches) (15pp.)
5. Optional: Chapter 1 in Denscombe (2010) (Survey as a strategy)
6. Optional: Chapter 2 in Denscombe (2010) (Case study as a strategy)

Video Material

1. The role of theory
2. Writing tip: Some patterns for referring to literature
3. From research objectives to research questions
4. Some good and bad research questions
5. Extra video: "Literature"

Task 3A. Create Research Questions for Your Research Proposal from Literature Study (Background/Related Work)

Take your research problem, aims, and objectives from last week, and propose research questions for a research study that address your problem, aims, and objectives. Then try to find at least five scientific articles (preferably from IEEE or ACM) and summarize them.
First, finish the following items:

1. Copy your research problem, aims, and objectives from the previous week's tasks to this week's task.
2. If you want, edit your problem, aims, and objectives according to the feedback you got from other students (if you got any at this point).
3. Add more relevant, scientific references so that the minimum number of references to similar studies is **at least five**. (Summarize your selected articles). This will be your *Background/Related work/Previous* section in the Final report.
4. Create research questions that help you meet the objectives of your research study. You should have one main research questions and some subquestions.
5. Check your own questions against the checklist for research questions. You don't have to report your checking here, just go through the list and make sure that your work meets the checklist.

Assignment Information

Learning objectives: 1) To improve your ability to write research questions that they can be answered through research. 2) To improve critical reading, evaluation, and feedback skills.
Estimated time to finish: 4 hours

Checklist for Research Questions

Use the criteria below to evaluate other course participants' submissions as well as your own:

1. **Please provide an example of misunderstanding the question.** (Questions should be clear and unambiguous, should have no multiple meanings, and it should be easy to see what exactly do they ask)
2. **Please provide an example of how an answer could look like.** (If it's hard to imagine at this point *how* the answer will look like (not *what* the answer is but how it roughly might look like) then the question might be problematic.)
3. **Are the questions short and understandable by non-specialists?** (The longer the question, the higher likelihood for ambiguity and obscureness. Of course not all questions (e.g. P=NP?) can be understood by non-specialists, but it's generally a good thing if yours can.)
4. **Can you think of any obvious answers?** (If the answer is obvious, the research question won't probably tell much new. Every now and then you stumble across a question where the answer is so obvious that you're left wondering why the research was done in the first place. "Does Moodle enable distance learning?")
5. **Please provide an example of how the questions can be answered through empirical research.** (Is it possible to answer the question through empirical research? Can data collection and analysis, in principle, provide answers to this question?)
6. **What kind(s) of empirical data collection does the question require?** (In this course all research projects must be empirical, so those that can be answered without any empirical research have to be revised.)
7. **Give examples of different approaches that can be used to answer the questions, leading to different types of answers?** (In many types of research study it's a great signal if you can use different methods to address the problem. This doesn't apply to all research, but it's generally a good thing to have.)
8. **Give an example of a) what the answer looks like if the expected happens, and b) what the answer looks like if the expected results aren't found.** (Think of what happens if you don't get what you expected to get. Does that make your research useless or not? For instance, any answer to "Which of the eight primary emotions can be automatically extracted from forum posts?" is interesting, including none, some, or all.)
9. **How are the study parts aligned (what sentence(s) in the aim lead to the question, and how do the subquestions link with the objectives?)** (This is one of the most important aspects of excellence in research projects. The main research question should be well aligned with the aim of the study. Sub-questions should be well aligned with the objectives. Overall, the research question should address the research problem. (In many studies objectives aren't required, but in our study here they are.))
10. **To what extent are the questions neutral? Do they assume something or imply something?** (In most cases, research questions don't need to take sides about "good" and "bad". Please see the lecture videos for more info on this aspect.)

The Term Research

The noun "research", in the meaning we use it, is an uncountable noun (like "baggage" and "air") and shouldn't be used in its plural form "researches." Use "research studies" instead. You can say that you're doing research, but when you talk about some other people's work, they don't do "researches"--they do research too, and the investigations they do are "research studies." (Yes, sometimes you see people use the word "researches" but it's uncommon and we don't encourage it in this course.)

Practice of Evaluating Research Questions

There are six questions, try to understand why the answers are correct, why the others are wrong. This is an optional activity to facilitate your learning process.

Question one: Consider the following research question:
"*Do students appreciate that e-learning is the best form of learning?*"
What's your opinion about the question?
Select one:

1. The question is good as such.
2. The question is not very good, because its answer is obvious.
3. The question is not very good, because it is too low-level.
4. **The question is not very good, because it is value-laden. (Correct)**

Feedback

The correct answer is: The question is not very good, because it is value-laden.
Comment: I do agree that the question is indeed low-level (because its answer is a yes/no answer that doesn't tell us anything about whys and hows). The biggest problem isn't that, though. There's something that is even more wrong with that question. Think about the possible outcomes of that research: Could you, for instance, find out that e-learning doesn't always work for the best of students?

Question two: Consider the following research question related to mobile messaging:
"What is the percentage of unnecessary messages people send from their phones?"
What's your opinion about the question?
Select one:

1. **The question is not very good, because it is a preaching question. (Correct)**
2. The question is not very good, because it contains an attribution problem
3. The question is not very good, because it is too low-level.
4. The question is good as it stands.

Feedback

The correct answer is: The question is not very good, because it is a preaching question.
Comment: I do not see the attribution problem here. In fact, this question does not make any attribution at all. When re-thinking this study, think about if this study is actually trying to convey some sort of a message to people?

Question three: E-voting means that people can cast their votes online regardless of time and place (within some time period). Consider the following research question related to e-voting:
"*Does e-voting make it possible to vote anytime anywhere?*"
What's your opinion about the question?
Select one:

1. The question is good as such.
2. **The question isn't very good, because its answer is obvious. (Correct)**
3. The question isn't very good, because there are hidden premises in that question.
4. The question isn't very good, because the question is biased.

Feedback

The correct answer is: The question isn't very good, because its answer is obvious.
Comment: Yes, I agree. Of course, there can be technical problems that actually hinder the "anytime, anywhere" aspect, but if the question is about technical issues, it should ask about those (e.g., "What technical issues may hinder the availability of e-voting systems?"). As e-voting is defined as voting that is not tied to a time and place, then the question is obviously "yes", and it's hard to see how one could get a different answer.

Question four: Consider the following research question:
"Is it possible to build a system for recognizing people's emotional states in their emails and social media messages?"
What's your opinion about the question?
Select one:

1. The question is good as it stands.
2. **The question isn't very good, because the results will be un-falsifiable or uninformative. (Correct)**
3. The question isn't very good, because it poses multiple questions at the same time
4. The question isn't very good, because it is looking for a problem instead looking for answer

Feedback

The correct answer is: The question isn't very good, because the results will be un-falsifiable or uninformative.
Comment: The problem with this question indeed is that you can hardly falsify it. That is, in case of "no" answer, it is hard to prove the result to be wrong. If you come up with "no", perhaps someone else could come up with a solution that shows "yes". No matter how many "no":s you get, you cannot prove 100% that there could not be a solution, after all.
Other problems are that a "yes" solution wouldn't still tell anything about how that would be done, how expensive would it be, or how effective would it be. Yes/no questions sometimes serve well as one subquestion, where other questions clarify and expand the results.

Question five: Consider the following research question:
"How much does a national e-learning policy affect learning outcomes in schools?"
What's your opinion about the question?
Select one:

1. The question is good as it stands
2. The question isn't very good, because it measures non-measurable things
3. The question isn't very good, because it is ambiguous (unclear).
4. **The question isn't very good due to an attribution problem. (Correct)**

Feedback
The correct answer is: The question isn't very good due to an attribution problem.
Comment: Yes, I agree that this is the biggest problem with this question. It would be hard to attribute any change in learning outcomes to this one high-level paper.
The problem is: You first introduce a governmental high-level paper that sets some policies on e-learning. At some point, changes may happen in budget allocation, teacher training, evaluation, and so on. Perhaps some schools get computers and change their curricula. After some years, you find out that national examination scores have increased by 2.5%. How sure can you be that the change has anything to do with the e-learning policy? Perhaps there is no effect, or perhaps the effect would have been greater without an e-learning policy? That is the attribution problem.

Question six: Consider the following research question:
"What is the relationship between group size and work productivity in computer-supported collaborative work?"
What's your opinion about the question?
Select one:

1. **This question is good as it stands. (Correct)**
2. This question isn't very good, because it is uninteresting
3. This question isn't very good, because it's not falsifiable
4. This question isn't very good, because it tries to measure non-measurable things

Feedback
The correct answer is: This question is good as it stands.
Comment: Yes - I agree that this is a very good research question. It is short and to the point, and very easy to understand. It can be made into a research project. It also does not suggest anything about the results, and it can be studied in various ways. It seems to be also timely and of some importance. You could take many different theoretical viewpoints towards it, too. It's clearly a research question that I could recommend to a student.

Task 3B. Review Two Submissions

After you have submitted your own work (Assignment 3A) to forum "Create Research Questions for Your Research Proposal", evaluate two other participants' work using the checklist for research questions. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.
Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers (see the videos about peer reviews). They are learning, just as you are. You may describe how your answer differed from theirs, and what you expected to see.
When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.
Learning objectives: 1) To improve critical reading, evaluation, and feedback skills.
Min. number of words: -
Estimated time to finish: 4 hours
Grading: 0-20 points.

- Completion of two reviews will earn 10 points each. Zero points is given where it is obvious that a participant has completed a review without examining the other participants' text. Reviews that offer little or no feedback for improving the text will get a reduced score.

Sample Post and Review 1

Analyzing Security level of some Kurdish website
by Khanda Hassan Ahmed - Thursday, 20 November 2014, 14:21

Research problem:

There are a wide range of people seeking their information using an easy way. Nowadays technology expanded and covered everything. Using website is one of the easiest ways to get what you want, despite the fact that every organizations, parties, industries and even individuals they have their own websites, so it became necessary to have the awareness of using such websites to avoid the risks that may cause from those they contains malicious contents. It becomes challenge for security administrators to solve the problem of how to cope with the frequent website security incidents, detect a large number of websites in a certain region rapidly, and provide effective and timely precautions [1].

This study focuses on the security level of a number of websites in Kurdistan region those are visited frequently [2] by collecting data using interviewing and questionnaires from both the user of the website and the developer of the site, for example if a user felt he/she has being hacked thorough browsing a website?, or if a developer catch an attempt for hacking from adversaries?, and more detecting ways can be explored throughout this study.

This research consist of a number of step

1.Determine the number of website to be analyze

2.Check whether a website is alive

3.To know if the website protected by a firewall (filtered or not filtered)

4.To identify the open port of a website

There are also a number of sub steps in between the above steps.

These are the task of the developer when creating the website before an attacker try to attack it

Aim

This research describe the security level of some website in Kurdistan

Objective

To measure the vulnerability of malicious content of a website.

To distinguish a secure website from a fake website.

To rank those websites' protection level.

Main question:

To which extent the Kurdish website are safe to be use as a source of information?

Sub questions:

1.What are the key measurements of unsecured website?

2.How to know whether a website is secured and safe to visit?

3.What is the level of security of a given website (Excellent, very good, good, bad)?

References:

1. Liang He, Yong Fang, Liang Liu: Website Regional Rapid Security Detection Method. Computational Intelligence, Communication Systems and Networks (CICSyN), 2013 Fifth International Conference, June 2013
2. Abdulrahman Alarifi, Mansour Alsaleh, AbdulMalik AI-Salman: Security Analysis of Top Visited Arabic Web Sites. Advanced Communication Technology (ICACT), 2013 15th International Conference, 2013

These references can be use too:

1. Joshua E. Kocher, Dr. David P. Gilliam:Self Port Scanning Tool: Providing a More Secure Computing Environment Through the Use of Proactive Port Scanning. Enabling Technologies: Infrastructure for Collaborative Enterprise, 2005. 14th IEEE International Workshops 2005
2. Chao-Hsi Yeh and Chung-Huang Yang: Design and Implementation of Honeypot Systems Based on Open-Source Software. Intelligence and Security Informatics, 2008. ISI 2008. IEEE International Conference 2008

480 words

Re: Analyzing Security level of some Kurdish website
by Vishnu Unnikannan - Friday, 21 November 2014, 16:22

Khanda
Website security is a very hot topic - it has been one since the very first website arrived on the WWW. I myself have been at the receiving end of a malicious cracker that took down my business website in the past and i appreciate your research question. As more and more people come online for news and views, such a research duty about a politically disturbed place like Kurdistan could lead to many interesting insights about the international politics and the people who hold the policing sticks
A few comments on how to better clarify and focus your research:

1. List of Kurdish websites is easy to figure out. I would like you to select a small number of websites and list them down now as part of your pre-research activities rather than as a part of the research. This will make it easier for you to figure out the complexity of the job at hand. Determining the number of websites you need to analyse as a part of the research will make the research longer and more troublesome than it is necessary.
2. You have to determine what sort of safety are you thinking about: Are you thinking about the security of the user who browses the website? Are you thinking about the security of the website from the webmaster' s point of view? Are you trying to figure out how many malicious code elements are found in the Kurdish websites? You see, your research problem is not very clear in this aspect.
3. Your main question needs to be more specific. The question can be understood in a lot of ways. It may be a question of how safe a kurdish website is. It may be a question of how safe the content of a Kurdish website is. It may be a question on the trustworthiness of the content of a Kurdish website. Please reword the question so that it is a bit more specific and clear.
4. How would you classify the security of a website? I see again that you move between a secured website and a secure usage of a website in your sub questions. Google itself provides a malicious software and malicious website and phishing warning on detection of code that might affect the user. There are many applications that can warn user on malicious code executed in a website. So as far as user security is concerned there are enough products in the market to answer that question.
5. How do you plan to collect the data on hacked websites? Do you happen to know enough webmasters to have an interview?

I would seriously consider re writing your research questions , aims and objectives so that they are a bit more streamlined. Right now there is quite a bit of ambiguity on how and what you are attempting to study. The great part is that anything to do with online security and a study of how its

is done in Kurdistan will be a great eyeopener. I can extrapolate and figure out your intentions from the text, but that shouldn't be the case. I should be able to see and figure out your research intentions easily, which unfortunately will not happen unless you clarify them. Try to concentrate your research on one aspect : either the user security or the website's integrity from 3rd party hackers. Please re write your heading: Analysing ..there is a typo there.
Good luck, once you decide on which part of security to concentrate on, this will be one study I would love to read.
591 words

Re: Analyzing Security level of some Kurdish website
by Rashedul Amin Tuhin - Sunday, 23 November 2014, 13:30

Hey Khanda, here is the review of your research questions.

1. **Please provide an example of misunderstanding the question.**

Q. To which extent the Kurdish website are safe to be used as a source of information?

- The phrase "safe to be used as a source of information" might be misunderstood as "Information trustworthiness". From the research problems, aims and objectives, it is obvious that the study deals with the user safety and security analysis of the sites.

1. **Please provide an example of how an answer could look like.**

- An answer might look like a chart showing the level of security of websites A,B,C etc followed by a description of the security factors of the sites.

1. **Are the questions short and understandable by non-specialists?**

- Yes, the questions are short and understandable by most. However, at the main question, the phrase "safe to be used as a source of information" might need to be reconsidered.

1. **Can you think of any obvious answers?**

Q. How to know whether a website is secured and safe to visit?

- The answer to this question might be obvious. It is generally known that sites using modern security measures (SSL/TLS, no unnecessary open ports, reliable uptime etc.) are considered to be secure. However, the question might be rephrased from the objectives like, Which are the sites that could be considered as secured and safe to visit?

1. **Please provide an example of how the questions can be answered through empirical research.**

- It is possible to collect data by running an Nmap/OpenVAS scan on the website and gather information about its security measures. For example, OpenVAS scan

revealed that site A allows anonymous FTP login with root access without any password, which is a great vulnerability of the site.

1. **What kind(s) of empirical data collection does the question require?**

- It requires observation studies gained by running particular security testing tools. Also, responses from interviews and questionnaires might be required for data collection.

1. **Give examples of different approaches that can be used to answer the questions, leading to different types of answers?**

- For example, the security analysis tools might reveal a vulnerability of the website that the developers/administrators of the website are now currently aware of. Whether, from the interviews/questionnaires might not reveal that.

1. **Give an example of a) what the answer looks like if the expected happens, and b) what the answer looks like if the expected results aren't found.**

- In case of any expected results, unsecured websites would be clearly distinguished and potential vulnerabilities will be revealed. Unexpected results (all the websites are secured with no vulnerability) might strengthen the level of trustworthiness of the sites. However, the results of the study would be useful and interesting to look at.

1. **How are the study parts aligned (what sentence(s) in the aim lead to the question, and how do the subquestions link with the objectives?)**

- The main research question seems a bit problematic as discussed in point 1 (when considered to be aligned with the aim). The sub-question 2 seems obvious considering objective 2. Rest of the questions are seemed to be alright and well aligned with the objectives.

1. **To what extent are the questions neutral? Do they assume something or imply something?**

- The questions are neutral in a sense that they do not imply presume something. It is a study to describe the security level and rank them according to the protection level. Hence, the neutrality of the questions are justified.

Best of luck.
582 words

Sample Post and Review 2

Smartphone as electronic wallet, the NFC mobile payment - Which is the Italian consumers' perspective?
by Ivan Pennisi - Monday, 17 November 2014, 17:04

A payment is the transfer of money from one entity to another. Many payments are done by using cash, checks, debit/credit cards and bank transfers. The introduction of technology brought new and alternative methods. Online and mobile payment methods are some of them, and they are done using an electronic device. Consumers use new technologies instead of traditional methods; one of these could be the NFC Mobile payment. Near Field Communication (NFC) mobile payment has been emerging as a noticeable phenomenon that can enable consumers to turn their smartphones into digital wallets (Thanh-Thao T., 2014). The Italian government is taking measures to limit cash payments, in order to fight tax evasion. As reported by La Repubblica (2014), the tax fraud costs annually € 180 billion (the highest level among European countries) and causes tax increase on Italian citizens. In 2011, cash payments were banned for amounts exceeding 1.000 Euros and starting from July 1 2014 payments are performed electronically for amounts exceeding 30 Euros. The ministerial decree, as reported by the Gazzetta Ufficiale (2012), requires the mandatory adoption of ATM by traders and professionals. This policy has speeded up the adoption of electronic payments and it is changing Italians' payment habits. Electronic money is easier to trace thus, tax evasion is more difficult. Electronic payments are made directly by payee's bank accounts, using security features over the network. Currently, the most popular electronic payment method in Italy is the debit/credit card, but the continuous research of new technologies is paving the way for the introduction of a new payment method, the near field of communication. The developments in mobile and communication technology have contributed to change individual lives and business transactions. NFC is expected to become a very trendy technology for mobile services, more specifically for mobile payments (Ondrus and Pigneur, 2007). The NFC payment has the potential to become an alternative or a substitute of the traditional and best known payment methods. Near Field Communication (NFC) as a promising short range wireless communication technology facilitates mobile phone usage of billions of people throughout the world that offers diverse services ranging from payment and loyalty applications to access keys for offices and houses (Coskun, Ozdenizci and Ok, 2013). This research project will investigate if Italian consumers would be interested to adopt the NFC mobile payment as an alternative or substitute of common electronic payment. The possible introduction of this technology will be analyzed by using Technology acceptance model and Technology adoption lifecycle. These are analysis methods that enable to set rational approach to evaluate the NFC technology acceptance in Italy.

Aim: Explore the potential of NFC mobile payment to be an alternative or a substitute of the common electronic payments in Italy, and whether Italians would like to adopt a new way of payment for goods through the use of NFC-enabled devices.

Objective 1 - To identify the factors that influence consumer adoption of NFC technology payment.
Objective 2 - To establish whether NFC technology could substitute the wallet.
Research question: How the Italian consumers can adopt the nfc mobile payments as an alternative or substitute of common electronic payments?

Subquestion 1: How can Italians accept the adoption?
Subquestion 2: Could the NFC technology payment replace the wallet?

References:

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La Repubblica (2014, July 7). Moneta elettronica ancora un miraggio e l'Italia rincorre. Economia & Finanza. Retrieved from: http://www.repubblica.it/economia/affari-e-finanza/2014/07/07/news/moneta_elettronica_ancora_un_miraggio_e_litalia_rincorre-90887574/
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Vedat Coskun, Busra Ozdenizci and Kerem Ok (2013). A Survey on Near Field Communication (NFC) Technology. Retrieved from: http://dl.acm.org/citation.cfm?id=2504592.2504668&coll=DL&dl=GUIDE&CFID=597637039&CFTOKEN=75100975
707 words

Svar: Smartphone as electronic wallet, the NFC mobile payment - Which is the Italian consumers' perspective?
by Rickard Lundén - Monday, 17 November 2014, 20:49

Hi Ivan!
Here follows my review on your questions:

1. **Please provide an example of misunderstanding the question.**
Currently the question is "How the Italian consumers can adopt..." This is quite descriptive instead of a question. I think it would be more clear if it was "How can the Italian consumers adopt...".
First sub-question should include that it is about NFC. I think the main question and first sub-questions are very alike.

2. **Please provide an example of how an answer could look like.**
A possible answer to the question could be "This study shows that 12% of the Italian consumers think NFC can replace the wallet, and 85% think that it could be a substitute to common electronic payment methods".

3. **Are the questions short and understandable by non-specialists?**
Yes, they are.

4. **Can you think of any obvious answers?**
No, the questions do not have obvious answers.

5. **Please provide an example of how the questions can be answered through empirical research.**
The questions can be answered by asking Italians through surveys consisting of questions about their thoughts on NFC mobile payment.
6. **What kind(s) of empirical data collection does the question require?**
The questions require surveys.
7. **Give examples of different approaches that can be used to answer the questions, leading to different types of answers?**
The only way to gain knowledge about the subject is to receive input from Italians in one way or another. This can be done through surveys or interviews.
8. **a) Give an example of what the answer looks like if the expected happens.**
"The study shows that 85% of the Italians think NFC mobile payment can be a substitute to common electronic payment methods, although only 12% think that it could replace the wallet".
8. **b) Give an example of what the answer looks like if the expected results aren't found.**
The only case I could think of is if all the respondents do not know what NFC mobile payment is. Otherwise there will be results.
9. **How are the study parts aligned (what sentence(s) in the aim lead to the question, and how do the subquestions link with the objectives?)**
The aim is clear in what the study is going to aim for and the questions reflect the aim very well. The sub-questions are well aligned with the objective, but the first sub-question could be increased to something like "How can Italians accept the adoption of NFC mobile payment?".
10. **To what extent are the questions neutral? Do they assume something or imply something?**
They are neutral.
Good luck!
431 words

Re: Smartphone as electronic wallet, the NFC mobile payment - Which is the Italian consumers' perspective?
by Yanna Cui - Tuesday, 18 November 2014, 13:58

Hi there, please see my review below.

1.**Please provide an example of misunderstanding the question.**

The research question is already quite clear and easy to understand, however, I would format it like:

How satisfied will the Italian consumers adopt the NFC Mobile payment...

2.**Please provide an example of how an answer could look like.**

More than 30% of the Italian consumers are satisfied with the NFC mobile payment, 40% are not happy, the rest 30% don't know what it is about.

3.**Are the questions short and understandable by non-specialists?**

Yes, it is.

4.**Can you think of any obvious answers?**

No, this research question need to explore and collecting data in order to be answered.

5.**Please provide an example of how the questions can be answered through empirical research.**

This question can be archived by developing a survey and interview towards Italian consumers.

6.**What kind(s) of empirical data collection does the question require?**

Interview and Survey are needed for data collection for this research.

7.**Give examples of different approaches that can be used to answer the questions, leading to different types of answers?**

No other ways except above approaches can be used to answer the questions.

8.**Give an example of a) what the answer looks like if the expected happens, and b) what the answer looks like if the expected results aren't found.**

If we get to know the detailed figures for Italian consumers satisfaction about NFC mobile payment, then we would know 30% of them are happy with it, then there is still a large space to grow. On the other hand, for those who does not know what NFC is, they can be educated by the advertisement or even influenced by the existing NFC users.

9.**How are the study parts aligned (what sentence(s) in the aim lead to the question, and how do the subquestions link with the objectives?)**

The sentences "Whether Italians would like to adopt a new way of payment for goods through the use of NFC-enabled devices" directly link to the Research question.

The subquestions are directly formed from the Objectives, they are well aligned.

10.**To what extent are the questions neutral? Do they assume something or imply something?**

This research question is clear and operationalizable, so it is very much neutral.

388 words

Re: Smartphone as electronic wallet, the NFC mobile payment - Which is the Italian consumers' perspective?
by Ola Elobeid - Wednesday, 19 November 2014, 01:11

Hi Ivan,
I really liked your research, that's why you see me every week show up and review.

1. **Please provide an example of misunderstanding the question.**
2.

The question " How the Italian consumers can adopt the nfc mobile payments as an alternative or substitute of common electronic payments?" is clear but it contains multiple meanings.

2. **Please provide an example of how an answer could look like.**

For the first sub-question the answer could be " by providing special methods such as ...".

3. **Are the questions short and understandable by non-specialists?**

Yes, they are.

4. **Can you think of any obvious answers?**

No, I don't think so.

5. **Please provide an example of how the questions can be answered through empirical research.**

By collecting data through interviews or surveys or even the results of the previous studies in the field.

6. **What kind(s) of empirical data collection does the question require?**

Surveys and interviews are empirical data collection strategies.

7. **Give examples of different approaches that can be used to answer the questions, leading to different types of answers?**

Surveys and interviews.

8. **Give an example of a) what the answer looks like if the expected happens**

The NFC technology payment can replace the wallet because of ....

and b) what the answer looks like if the expected results aren't found.

Italians don't accept the adoption and this leads to .....

9. **How are the study parts aligned (what sentence(s) in the aim lead to the question, and how do the sub-questions link with the objectives?)**

It looks very aligned. When we go through the study we can see the harmony between all parts of it and they all serves the subject.

10. **To what extent are the questions neutral? Do they assume something or imply something?**

They are obvious, functional and neutral. They don't assume a special thing.

Best regards,
Ola
309 words

Assignment 04. Method Choice for Data Collection

After research questions are clear, there should already be a good idea about what types of information are needed for answering the questions. And when the type of information is known, it is usually straightforward to choose a data collection method that yields the right type of information. Data collection methods (questionnaire, interview, instrumentation, etc.) are typically connected with specific research acts (identify, measure, describe, etc.).

Methods are roughly divided into qualitative and quantitative, but a large number of very different methods are found within both classes. In this course, try to avoid mixed-methods research, because it is very tedious, time-consuming, and will make the report much longer. If you are doing design research, do not try to do all the steps of the design research cycle in one study (this applies to theses, too).

Ethical questions come hand-in-hand with the choice of data collection method. Working on algorithm research with no human participants brings up very different ethical questions than working on a health informatics system. Every research study with human participants, or with outcomes that affect humans, must explicitly discuss ethical questions. The same applies to research with animals, research that affects the nature, and so forth. The risks of research must always be discussed in a thesis.

Readings:

- Chapter 3 in Johannesson & Perjons (2012) (**Research strategies and methods**) (8pp.)
- Chapter 4 in Randolph (2008) (Data collection in educational technology research) (8pp.)
- Appendix 1 in Denscombe (2010) (Research ethics) (14pp.)
- Depending on your plan for data collection:
    - Chapter 9 in Denscombe (2010) (**Questionnaires**) (20pp.)
    - Or Chapter 10 in Denscombe (2010) (**Interviews**) (32pp.)
    - Or Chapter 11 in Denscombe (2010) (**Observation**) (21pp.)
    - Or something more suitable for your topic.

Video Material and slides:

- How does a research question lead to the type of information needed (Useful Types of Information.mp4)
- Some method choices for collecting the various types of data (Data Collection.mp4)
- Research Ethics (Research ethics.mp4)

Research Ethics Guidebook: The following link is a very good resource for research ethics in projects that deal with human participants.
Click http://www.ethicsguidebook.ac.uk/ link to open resource.

Task 4A. Propose a research method for your study

This weeks work consists of two sub-tasks:

Task 4A.1. Take your updated research design from the last weeks, and propose research methods for collecting information that will respond to your research question(s).

Task 4A.2. Design an informed consent sheet for your research study.

Detailed description for task 4A.1

Copy your previous weeks' work, make sure you've edited it according to the comments that you've got from your peers and the course facilitator (if you have already received that). Be sure that there are at least 3 (preferably more) relevant, academic references at this stage. Also start to describe "limitations" (focus) of your study (the focus part will develop further throughout the study).

Describe what kinds of information you can use to answer your research questions (try to think of more than one type). Describe which data collection methods you could use to get that information (try to think of more than one). Select one method and justify selecting that method (explain why that method is the most suitable for your research questions). Then discuss varieties of that method (for instance, if you chose interviews, discuss pros and cons of individual interviews, group interviews, focus groups), select one, and explain why your pick is the most suitable for your study. (Note that mixed-methods research is not recommended because it more than doubles the amount of work that is needed for reporting and executing the study.)

Include, in your text, **at least four references** to methods literature that support and describe your choice of method. In those references, mention the exact page where you refer to. Those references can be to different parts of a single book, but preferably to more than one book/article. Make sure to use the checklist given below before you submit your work.

Learning objectives: 1) To increase understanding of methodological variety. 2) To be able to select a method according to information needs for a research question.
Estimated time to finish: 4 hours

Checklist for Method Choice for Data Collection

Points	Criterion to Think About
0-2	There is a discussion on research questions and what kinds of information could be used to answer those questions.

0-2	Method for data collection is justified by the suitability of the selected data collection method over other possible methods.
0-2	Methods choice is justified by what other researchers have used in similar studies. (Required for 3 points in [U6] in M.Sc. thesis grading.)
0-2	Method choice is well aligned with the problem, aims, and objectives of the study (especially look at the objectives).
0-2	Strengths and weaknesses as well as different outputs of the selected method is explained, possibly in comparison with the alternatives.
0-2	The selected method is explained in terms of research questions and data needs for answering them.
0-2	Variations of the selected method are presented and their strengths and weaknesses discussed.
0-2	There are four or more exact references to literature regarding research methods (page included). The references can be to the same text/book but preferably to several.
Total: 0-16	Overall score for the task

Detailed description of task 4A.2

Research studies that involve human participants require the informed consent of those participants. After reading Appendix I of Denscombe (2010) you should be able to create an informed consent form for your research study. If you have a topic that does not deal with human participants, make a consent form for a hypothetical study.

For this assignment, your job is to reflect on your proposed research design, and create a consent form for it. The consent form should follow the instructions in your course material. Your consent form should be between 200 and 400 words.

Use the Checklist for Evaluating Informed Consent Forms, before you submit your work.

Please note that consent forms are expected to improve them by the feedback from peers and by an example forms.

Learning objectives: 1) To understand informed consent; 2) be able to formulate a consent form for research studies with human participants.
Estimated time to finish: 4 hours

Samples for Informed Consent Form: WHO has a number of templates for informed consent, but please note that those are way too long and detailed for small-scale studies! They do, however, give pretty good idea about the items in informed consent form in general.

A sample[1] can be found in the following link:
https://drive.google.com/open?id=1r-9hI7IhkZQWPaC0Ar6WSxKs_CDMfNbA

Checklist for Reviewing Informed Consent Forms

Use the following checklist for peer reviews of the informed consent sheets:

- By reading this form, how easily could a typical participant understand all the ethical issues and risks in this research? What kinds of misunderstandings could there be?
- How well-focused and relevant information does the form provide on the identity of the researcher? How could you improve it?
- By reading this form, how easily could a typical participant understand what the study is about, what the aims are, and how do the participant's responses contribute to the research? How could each of those be explained more clearly?
- How well does the informed consent form explain anonymity, use of data, and data security in the study? Is anonymity *really* anonymous or can there still be a way to fail with it? To what purposes is the use of data limited? What kinds of problems with data security can you think of?
- How well does the informed consent form explain what happens to the data during and after the study? Is it too limited or too broad?
- How well does the informed consent form take into account research with minors (remember: research with minors requires parents' consent.) If minors accidentally enrolled in this study, would the consent form take that into account?
- By reading this form, how easily could a typical participant understand the level of their commitment, contribution, or expectations in this research? What kinds of misunderstanding could there be?
- By reading this form, how easily could a typical participant understand confidentiality and security issues regarding this study? Would you trust this kind of a form enough to sign it?
- To what extent could the form be printed out as it is now, and distributed to participants? Would your extremely suspicious distant relative from America sign it?

Task 4B. Review two submissions and provide grading

Task 4B.1. After **you have submitted your own data collection plan, evaluate and grade two other participants' work using the Checklist given above for Task 4A.1. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.**

[1] *Courtesy: Dr. Matti Tedre, Associate Professor, Department of Computer and Systems Science, Stockholm University, Sweden.*

Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers. You may describe how your form differed from theirs, and what you expected to see.

The forum now also has an option to grade other participants' work on scale 0-16. Give grades to as many participants' submissions as you like, but at least to those whom you gave feedback. This grade will *not* be considered in final grading, but it is for giving feedback to others on a numerical scale about what grade they should expect.

When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.

Learning objectives: 1) To improve critical reading, evaluation, and feedback skills. 2) To become more self-critical about your own work by reading similar work by others.
Estimated time to finish: 4 hours
Grading: Acceptable/Unacceptable

- Completion of two reviews will earn the "**Acceptable**" grade. "**Unacceptable**" grade is given where it is obvious that a participant has completed a review without examining the other participants' text. Reviews that offer little or no feedback for improving the text will get a reduced score. A simple yes/no review over the grading items, without explanations or feedback for improving the text, will get the "**Unacceptable**" grade.

***Task 4B.2. After* you have submitted your own informed consent form, evaluate two other participants' work using the criteria for informed consent forms. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.**

Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers. You may describe how your form differed from theirs, and what you expected to see.

When you have done the two reviews, submit the hyperlinks to your two reviews in the appropriate section.

So, there will be a total of four (04) links, two for the task 4B.1 and two for two for the task 4B.2.

~~Samples for the forum posts will no longer be given from now on.~~

Assignment 05. Data Collection

Before the actual footwork begins, a researcher must still decide a number of things. One of the most important questions is sampling: How does one select where to collect data and how much data should there be? Researchers use a wide variety of data collection methods, but how should those be done in practice? There are particular ways for selecting interviewees, other ways for reaching out to questionnaire respondents, and yet other ways for selecting inputs, outputs, and parameters for research on computer simulations, program test runs, or other fully computer-based studies.

Another extremely important, and often seriously underappreciated task is refining the data collection instrument. It's surprisingly difficult to design a good questionnaire. It's very hard to ask the right questions in an interview. It's hard to decide which data to collect of computer programs, algorithms, etc. without biasing the results in favor of one of the solutions. How to not ask leading questions; how to design neutral questions; how to be an unbiased observer—those are some central questions in designing a data collection instrument.

Readings

1. Chapter 1 in Denscombe (2010) (Surveys and Sampling) (41pp.).
2. Chapter 12 in Denscombe (2010) (Document data) (19pp.)
3. Re-read pages 76-77 in Randolph (2008) (Log files)
4. Re-read the relevant one from the following; especially the description of how to design a questionnaire, interview, or observation protocol:
    - Chapter 9 in Denscombe (2010) (How to design a questionnaire)
    - Chapter 10 in Denscombe (2010) (How to design an interview)
    - Chapter 11 in Denscombe (2010) (How to design observation protocol)
5. Optional: Mason (2010) (About data saturation in qualitative research)

Video Material

1. Sampling strategies in quantitative studies (*There are some wrong information in the video, see Errata*)
2. Selection of informants in qualitative studies

Errata: Comment from Dr. Matti Tedre, the Presenter in the videos:
I was just double-checking the videos, and I'm not very happy about the video on sampling in quantitative studies... At one point I talk about randomly selecting 300 students from DSV and emailing them, and getting 250 to reply you. There I say that those 250 who respond you may differ from those who didn't respond you, so your sample may be biased. Well, that's not really the case: the

sample is still fine; that bias is called non-response bias - not sampling bias. My apologies for the blunder! I'll fix that when I get the chance to re-record that video.

This week's work consists of two sub-tasks

Task 5A.1. Design a Data Collection Strategy

Task 5A.2. Design a Data Collection Protocol

And the reviews as Task 5B.1. And Task 5B.2.

Task 5A.1. Design a Data Collection Strategy

The next stage in the mini-project is to design a suitable *sampling strategy* (or *selection of participants* or *data collection strategy*) that is well in line with the overall study. Make sure that your sampling fits your focus and feasibility analysis - that it is small enough that you can collect the data in a couple of days! This week you should have your sample clear and a good plan for data collection ready.

Add your data collection / sampling / informant selection strategy to your research proposal document, and *post the whole document* to the forum here. If you don't post the whole research paper, it's hard to know whether the sampling strategy is suitable for your study. The data collection strategy **must include three direct references to the course literature** (mention the book and the page; for example (Denscombe, 2010, p.130).
For this task, re-read chapter 1 (Surveys and sampling) in Denscombe's book. Pay especial attention to subsection "*The pragmatic approach*", pp. 45-47.
You could discuss sampling in, for instance, terms such as:

- Representative vs. exploratory sample (why?)
- Sampling frame (why?)
- Which strategy is selected and why
- Random selection vs. deliberate choice (why?)
- Large/small scale, quantitative/qualitative (why?)
- Cost and effort
- If you are using purposive sampling, justify the choice of informants (see Creswell's different strategies)

Most common problems with sampling description in this course are:

- Misunderstood terminology (e.g. talking about "random" sampling when describing how "I will approach random people in the street")
- Mismatching terminology (e.g. describing a clearly purposive, convenience sample in terms of representative sample)
- "Random" anything: There has not yet been a study in this course that would be random sampling. "Random" in sampling terminology has a special meaning and the word should not be used in any other meaning. ("Random" people from Facebook, "random" people on the street, or "random" this and that isn't random sampling.)

- "Representative" anything: Very few of these small-scale studies have a sample that is representative of anything. If the sample is a representative sample, one should be able to explain what is it representative *of*.

The criteria in Checklist for Data Collection Strategy is not suitable for all kinds of studies, but use that to appropriate extent.

Learning objectives: 1) To improve ability to create, discuss, and critically evaluate a sampling strategy for research study.
Estimated time to finish: 4 hours

Task 5A.2. Design a Data Collection Protocol

Most research studies require a pre-planned protocol for data collection. An interview study should plan for prompts, probes, and checks - and perhaps use a tight structure. Observation studies often use a very specific observation schedule. A questionnaire sheet is a protocol of its own, and not very easy to design well. Collection of computer generated data (simulation, program execution, etc.) requires a good plan of inputs, parameters, types of tests, databases, and so forth. (Some of those types of data collection have a chapter of its own in Denscombe's book.)

If your study is going to be based on interviews, describe, in a text submitted in this forum, the structure of your interviews (the questions, themes, etc). As always, post also your whole document starting from problem statement so that others can judge it as a whole. If your study is going to be based on questionnaires, describe your questionnaire design and practicalities, and include your full list of questionnaire items. If your study is using some other type of data collection (measurements, comparison of algorithms, etc.), describe your plan.

In all cases, describe the practical arrangements that you'll need to do in order to make the data collection possible. (For instance, how exactly will the participants fill the questionnaire; how will the interviews be organized, what kinds of test runs will you do if you're studying programs, etc.)

The criteria in Checklist for Data Collection Protocol is not suitable for all kinds of studies, but use that to appropriate extent.

Recommended Tools for Surveys:
** Sample Size Calculator: www.surveysystem.com/sscalc.htm (Required for actual surveys)
Google Forms: https://docs.google.com/forms/
KwikSurveys: https://kwiksurveys.com

Samples for Informed Consent Form: A sample[2] can be found in the following link: https://drive.google.com/open?id=1r-9hI7IhkZQWPaC0Ar6WSxKs_CDMfNbA

Learning objectives: 1) To practice creating a questionnaire, interview protocol, observation protocol, or some other kind of data collection plan.
Estimated time to finish: 4 hours

Task 5B.1. Review Two Submissions of "Design a Data Collection Strategy"

Read other students' work in the forum "**Design a Data Collection Strategy**", and evaluate two other participants' work using the checklist for data collection strategy. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.
Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers (see the videos about peer reviews). They are learning, just as you are. You may describe how your answer differed from theirs, and what you expected to see.
When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.

Learning objectives: 1) To improve critical reading, evaluation, and feedback skills. 2) To elevate research design skills to a research evaluation level.
Estimated time to finish: 4 hours
Grading: 0-20 points.

- Completion of two reviews will earn 10 points each. Zero points is given where it is obvious that a participant has completed a review without examining the other participants' text. Reviews that offer little or no feedback for improving the text will get a reduced score.

Task 5B.2. Review Two Data Collection Protocols

Read what other students have submitted to forum "**Design a Data Collection Protocol**", and review two other participants' work using the *checklist for data collection protocols*. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.

[2] *Courtesy: Dr. Matti Tedre, Associate Professor, Department of Computer and Systems Science, Stockholm University, Sweden.*

Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers (see the videos about peer reviews). They are learning, just as you are. You may describe how your answer differed from theirs, and what you expected to see.
When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.

Learning objectives: 1) To improve critical reading, evaluation, and feedback skills. 2) To elevate research design skills to a research evaluation level.
Estimated time to finish: 4 hours
Grading: 0-20 points.

- Completion of two reviews will earn 10 points each. Zero points is given where it is obvious that a participant has completed a review without examining the other participants' text. Reviews that offer little or no feedback for improving the text will get a reduced score.

Checklist for Data Collection Strategy

You can find a similar checklist in Denscombe (2010). For quantitative research, the term "sampling strategy" is well suited; for qualitative studies "strategy for selecting informants" might be a better choice; and for computer-based research a term like "data collection strategy" could suit well. Replace the "sampling" below with more suitable terms if you like.

- How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)
- If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)
- If the sampling is claimed to be "representative", who / what population is it representative of?
- What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)
- If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)
- If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)
- How long do you expect the data collection will take if done like this?
- If the study is a qualitative study, what kinds of criteria does the author set for data saturation?

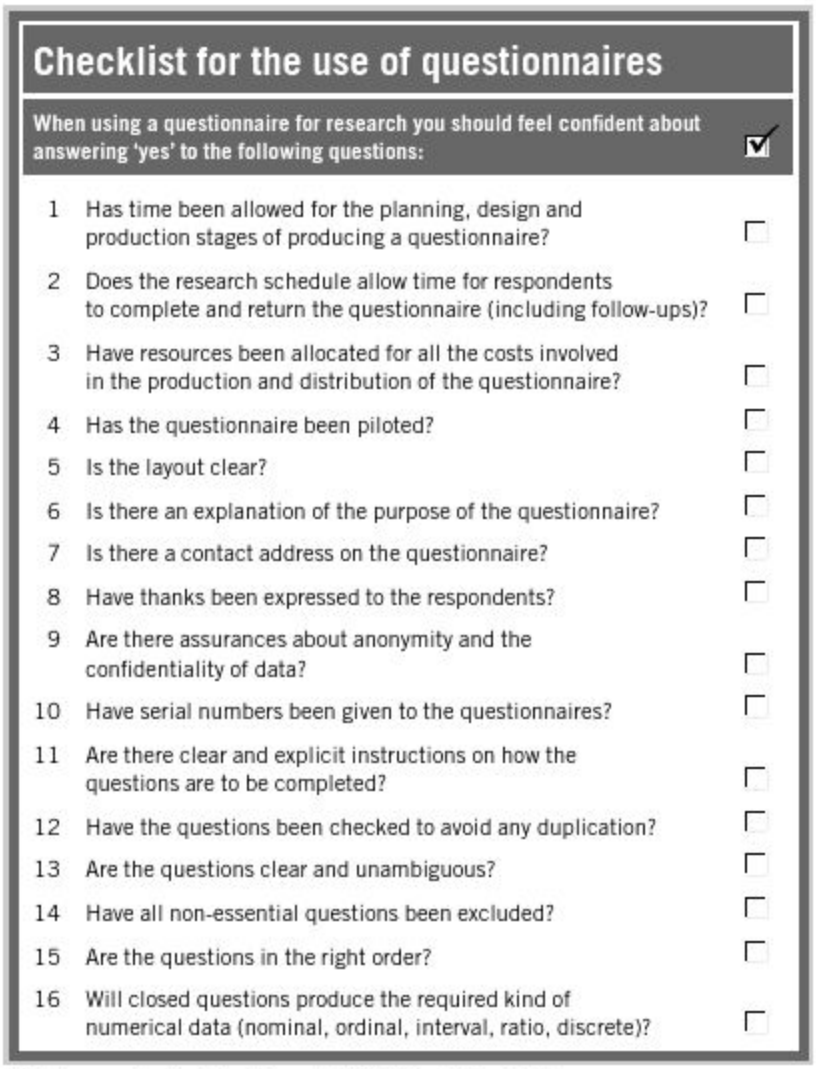
- Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?
- What biases has the author identified with the selected sampling strategy, and what other biases are there?

Checklist for Data Collection Protocol

You can use creatively the checklist below (it's based on Denscombe's checklists):

- Looking at the *kinds* of data collected by this protocol (structured / semi-structured / unstructured or closed / open or qualitative / quantitative), to what extent it could be used to answer the research questions? (Is the data *of the right kind* for the research problem?)
- Can you come up with how the questions / measurements could help to answer the research questions?
- Which of the questions / measurements in the protocol are the most related to the research questions?
- Which of the questions / measurements in the protocol are the least related to the research questions? Why? Could they be improved?
- How are the questions / measurements justified? (Are they just made up by the researcher or do they arise from the literature or the research rationale? For instance, if gender does not seem to be relevant to the research problem, don't ask if the respondents are male or female.)
- How well are the questions justified by real details about the context of research? (Sometimes researchers haven't done enough work on finding out what the really relevant questions are...)
- What equipment is going to be used and is it going to be suitable for collecting the data?
- To what extent are the questions / measurements are biased or leading? (Often we unintentionally ask leading questions and measure biased things, because we have some preconception about what's going on.)
- Are there any questions / measurements that seem obvious / irrelevant / naive?
- Does the questionnaire have a) clear layout; b) explanation of the purpose of the study; c) informed consent; d) researcher's contact information; e) instructions for filling the questionnaire; f) thanks at the end?
- Are there questions that ask two questions in one? (Don't expect to be able to find out anything useful with questions like "Was the *iStudy3* system useful for your study or were there usability problems?")
- Are there loaded questions, or questions that have implicit assumptions ("Have you quit doing drugs?")
- Are the kinds of data (nominal, ordinal, interval, discrete) proper for answering the research questions?

You can also use the following checklists of Denscombe, click to enlarge the images. These checklists are also available in the book.



Checklist for the use of questionnaires

When using a questionnaire for research you should feel confident about answering 'yes' to the following questions:		☑
1	Has time been allowed for the planning, design and production stages of producing a questionnaire?	☐
2	Does the research schedule allow time for respondents to complete and return the questionnaire (including follow-ups)?	☐
3	Have resources been allocated for all the costs involved in the production and distribution of the questionnaire?	☐
4	Has the questionnaire been piloted?	☐
5	Is the layout clear?	☐
6	Is there an explanation of the purpose of the questionnaire?	☐
7	Is there a contact address on the questionnaire?	☐
8	Have thanks been expressed to the respondents?	☐
9	Are there assurances about anonymity and the confidentiality of data?	☐
10	Have serial numbers been given to the questionnaires?	☐
11	Are there clear and explicit instructions on how the questions are to be completed?	☐
12	Have the questions been checked to avoid any duplication?	☐
13	Are the questions clear and unambiguous?	☐
14	Have all non-essential questions been excluded?	☐
15	Are the questions in the right order?	☐
16	Will closed questions produce the required kind of numerical data (nominal, ordinal, interval, ratio, discrete)?	☐

Checklist for the use of interviews

When conducting interviews you should feel confident about answering 'yes' to the following questions:	☑
1 Is it clear which type of interview is being used and why (structured, semi-structured or unstructured)?	☐
2 Is it clear whether the research is based on one-to-one interviews, group interviews or focus groups?	☐
3 Have field notes been written to provide supplementary information about the interaction during the interview?	☐
4 Have relevant details been collected about the context within which the interviews took place (location, prior events, ambience, etc.)?	☐
5 Has consideration been given to the effect of the recording equipment on the openness with which informants replied?	☐
6 During the interviews was the discussion monitored appropriately in terms of:	
• informants' key points?	☐
• reading between the lines of what was said?	☐
• trying to identify any inconsistencies?	☐
• being aware of the 'fob-off' answer?	☐
• looking for boastful or exaggerated answers?	☐
• looking for answers intended simply to please the interviewer?	☐
7 During the interviews were prompts, probes and checks used to gain worthwhile, detailed insights?	☐
8 Has consideration been given to the way the researcher's self-identity might have affected:	
• the interaction during the interview?	☐
• the interpretation of the data?	☐
9 In the case of interviews conducted via the Internet, has consideration been given to the impact of Internet research in terms of:	
• the loss of visual clues during the interaction?	☐
• the use of non-real-time communication?	☐

Sample post and review: Task 5A.1. And Task 5B.1.

E-learning training of new employees
by Svein Roald Meek Knudsen - Tuesday, 2 December 2014, 22:45

How does new employees in a company get their training.

1. Introduction

1.1 Background

As a new employee in a company, can be left to themselves and their own learning of the firm's IT systems. It can be to become familiar with storage areas, file structure and file templates. The employees must familiarize themselves with e-learning programs, and / or put into data applications by learning. Is self-learning effective, and is the purpose measurable.

From my own experience I have changed jobs 2 times the last 4 years, and people I have working with, have had some different experience with introducing company it-structure and it-program learning. A company will have new employees to learn and understand it-system and be able to work on the company software as soon as possible or without assistants. Use of resources for learning of it- system or it structure will be not effective use of work hours. The company will then work to get an effective learning process, and have new employees to learn this the most effective way.

Not everybody that is new employee take this challenge and learn this method of self-learning or they don't understand this e-learning way of getting competence effectively. Company then have to give the employees an good introduction of how, when and why this e-learning is chosen, and give information about where the new employees can get more information or assistant to understand the system or getting help with challenges.

Modern and effectively e-learning portals is then often used. And companies can build courses that suits the company, or external companies can make courses or externally courses related to software used in the company can be chosen.

Research:

Traditional courses needs locations, timeframes and often multiple learners to be effective. E-learning can be more effective, with no needs for timeframes and locations. Learners can use their own computer and desk. To be the most effective service the e-learning systems need to be evaluated, and will be increasingly adopted by companies, institutions for education and other corporations.(Byoung-Chan, et al., 2009)

Developers and trainers that use internet and new technologies need to develop new competence and this will help them be successful trainers.(Govindasamy, 2002)

The level of media use of the learners might give different acceptance of the e-learning methods.

The learner's media acceptance will be influenced by their level of experience at it-systems. Experienced learners might learn faster and more, and not so experienced learners will struggle with getting all learnings point.(Liu, et al., 2009)

Some employees will still have to get learning process with classical methods, but still will E-learning facilitate and improve the learning process if the employee is motivated.(Cindruz-Bacescu, 2014)
Motivation will together with virtual competence be one of the success criteria to have a good outcome for doing E-learning. (Zeying Wan, et al., 2012)

Will the employee effectively learn a company's IT applications with self-learning?

1.2 Research objectives

Aims:

To see if the employee effectively learn a company's IT applications with self-learning.

Objectives:

Make the employee motivated to do self-learning

How to make self-learning effectively and understandable.

1.3 Research Questions

Main question:

If the employee effectively learn a company's IT applications with self-learning software, is this method of learning the best way of letting new employees getting to know the company and their it systems?

Sub question:

Does self-learning software increase the motivation or decrease the motivation for a new employee, and will it give the employee a good start in the company?
Is the self-learning software a excuse for not taking the time for learn new employees software in the company, or is the history of self-learning process giving clear answer that this process is better than ordinary learning processes?

2. Methodology

2.1 Data Collection Methods

This research will aim to get more information about the employee will effectively learn with use of the e-learning system as a new employee in a company. One of the most effectively methods for this research will be to send out questionnaires, to a selected group of persons. (Johannesson & Perjons, 2012)
The reason for choosing questionnaires is to measure some predefined scenarios, and make some questions related to this scenarios. This will give the research clear and measurable answers to do

analyses on. The questionnaires will be sent to persons that newly have been employee in companies that uses e-learning as main method for training. (Randolph, 2008)

I was considering to go for a case study research and to do interview, some observations and support this with the questionnaires. But the time frame is to short, and for this assignment it will be good to train with use of the questionnaires. (Denscombe, 2010)

The good strengths with use of questionnaires is that it will guide the persons that answers to stick to the actual questions. This will give the research good material for analysis, and it could give very clear research results. The weakness of questionnaires could be if the aims and objectives of the research is not supported by the questions, and the research will not find the result or answers it supposed to get information related to. (Randolph, 2008)

2.2 Participants / Sampling

The participants for this research is chosen after the criteria of being employed in a company that base their training or learning of new employees with e-learning. Because of the timeframe and it is a small research the amount is 4 persons. And this persons will have the right information that this research is aiming for. (Denscombe, 2010)

2.3 Data Analysis

The analysis of the sampled information will be done in a Microsoft Excel sheet. The data will be sorted after the persons that was giving the information, and data filled in the columns for correct information.

2.4 Research Ethics

The ethical issues is solved with a mail to the actual interviewed persons. This will explain the purpose of the research, the use of sample data and that the interviewers will be anonymous.This mail must the interviewer print out, sign it and return to the researcher with the questionnaire for this research. (Denscombe, 2010)

2.5 Data collection strategy

The strategy of collection data with questionnaires are based of the idea to have clear measure able values to align.To make sure that the aims of the research is followed up, will the questions be made out of the aims as a guide. The questionnaires can be an effective research method, to a low cost for the study. (Denscombe, 2010, p. 169)

In this strategy I will present the idea of choose random selection of employee in a company, the collection method for random selection of employees would have been to select a company with 160 employees, and then send the questionnaires to 40 of the employees. The selection will be to take every fourth from an alphabetic list. (Denscombe, 2010, p. 28)

Then the research have some relative data to align. The more employee that will do the questionnaire, that better overview of the correct picture will the research give. That will be representative for the company. The best solution would have been to send out the questionnaires to all employees. (In this scenario - I will pic four persons to test the questionnaires for training of this exercise. This is done for the time frame of the task)

This questionnaires will have little bias to the actual aims and objects, the human factor can have some bias if the employee does not understand the question or the employee does not answer at all. The best results will be if all employees answers all questions and they are motivated to deliver their answers. (Denscombe, 2010, p. 170)

This data collection will not be sent to persons under 18 years, and will not take any ethnical differences in to the research. And the employees will get information about their anonymous, and it is important to give information about that the research data will not be saved after this study is done. The employees will get information about the research aims and objectives, and the research problems. (Denscombe, 2010, p. 7)

References

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Cindruz-Bacescu, M., 2014. E-Learning/M-learning - The new trend in foreign language teaching. *PROFESSIONAL COMMUNICATION AND TRANSLATION STUDIES,*, 01 June, p. 159.

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Zeying Wan, W., Deborah , C. & Haggerty, N., 2012. The Effects of Self-Regulated Learning. *Journal of Management Information Systems*, Summer, Issue Vol 29, pp. 307-339.

Re: E-learning training of new employees
by Bartlomiej Kolodziejczyk - Thursday, 4 December 2014, 01:52

Hi Svein,

Here's my review according to given review points:

·How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)

Your choice of data collection methodology is aligned and suitable to your research aims. Questionnaire seems to be probably the best option in your project case.

·If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)

The data sampling in this study is going to be random, and the randomness is ensured by selecting 40 random employees from company with at least 160 employees. The selection will be to take every fourth from an alphabetic list.

·If the sampling is claimed to be "representative", who / what population is it representative of?

It is going to be representative and the author explained that representative in this case means representative of the company that is going to be screened.

·What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)

The exact name of technique used in this study is Questionnaire and author provides reference together with page number. (Denscombe, 2010, p. 170)

·If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)

Sampling strategy will aim at 40 representatives out of 160 employees of the company. It isn't very clear why the author decided to use data from 40 representatives. I guess it is dictated by time limits.

·If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)

Yes, questionnaire is a kind of automated data collection. The biases have been explained by the author. However, according to the author those biases are very little and include mostly human factors. I agree with the author.

·How long do you expect the data collection will take if done like this?

This information is missing.

·If the study is a qualitative study, what kinds of criteria does the author set for data saturation?

Author doesn't mention data saturation or criteria that apply to data saturation. That information is missing from the text.

·Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?

Chosen sampling technique is very suitable for the purpose of the study. I guess questionnaire is the most suitable sampling technique for that specific study.

·What biases has the author identified with the selected sampling strategy, and what other biases are there?

According to the author those biases are very little and include mostly human factors. I guess the bias can also include type of the training that the employee is pursuing, experience and knowledge of the trainer and also company's division that he's going to work with (type of training).

Well done. Wish you luck!
Bart

Re: E-learning training of new employees
by Stian Björheim - Friday, 5 December 2014, 09:39

Hi Svein J

Here is my evaluation of your data collection strategy.

- **How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)**
    - The proposed sampling strategy relate to the aim of this research study.
- **If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)**

- The data sampling in this study is going to be random, and the randomness will be ensured by selecting 40 random employees from company with at least 160 employees.
- **If the sampling is claimed to be "representative", who / what population is it representative of?**
    - It is going to be representative and it is explained, that the representative in this case is the representative of the company that shall be screened.
- **What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)**
    - The exact name of the sampling technique used in this study is Interview. The text have reference to page number in literature (Denscombe, 2010, p. 170).
- **If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)**
    - Sampling strategy will aim 40 representatives out of 160 employees of the company.
- **If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)**
    - The study will not use automated collection of instrument data.
- **How long do you expect the data collection will take if done like this?**
    - This information is not mention in the strategy, but I assume that you are going to be occupied this Christmas with data analysis of the material. Good luck!
- **If the study is a qualitative study, what kinds of criteria does the author set for data saturation?**
    - The study is questionnaires and the research say nothing about criteria for data saturation.
- **Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?**

- The chosen sampling technique is suitable for this purpose.
-

- **What biases has the author identified with the selected sampling strategy, and what other biases are there?**

  Biases are not mention in this strategy.

  Have a great weekend!

  BR

  Stian

Re: E-learning training of new employees
by Lucas Jakobsson - Saturday, 6 December 2014, 11:21

Hej Svein,

Have a look at some feedback below..
How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)
You want to investigate eLearning in a presumably big company (in a small company this might not be the same type of an issue) and therefore you need a many answers, which is why this is the best way.
If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)
It is random within the company chosen, but I assume that the company chosen in not by random? You might want to specify this as well when discussing your sample..
If the sampling is claimed to be "representative", who / what population is it representative of?
It is representative of the company that it is being investigated in, however it is not representative of the general population for obvious reasons.
What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)

The sampling technique would be in my understanding be a combination of convince (the company I assume you work at as you have access to all employees?) & and stratified as you are looking for what is happening within that subgroup of the total population. This is not mentioned.

If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)

Not sure why 25% of the population, but I'm assuming the author will expand later?

If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)

A questionnaire will have biases and it is automated, depending on language and how questions are phrased responses may vary.

How long do you expect the data collection will take if done like this?

I would assume quickly, but not mentioned by author..

If the study is a qualitative study, what kinds of criteria does the author set for data saturation?

It is more of a quantitative study as it's a questionnaire going to many people

Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?

I would say it is very good as it's for a bigger company that has a higher employee turnover and would the type of company where eLearing would be relevant.

What biases has the author identified with the selected sampling strategy, and what other biases are there?

Not many are identified & explored. I would say bias of that company being a certain way (more pro eLearning or not depending on actual process currently in place, and the industry of the company, if they depend on IT a lot they may think it important to train if not then maybe it won't be something to relate to).

Have fun

Lucas

Re: E-learning training of new employees
by Monica Iversen - Saturday, 6 December 2014, 15:52

DESIGN DATA COLLECTION STRATEGY SVEIN:

Hi Svein J

Here is my feedback of your data collection strategy.

- How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)
- To stick to the topic and get concrete answers to work with, it looks like questions is the best choice for this study.
- If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)
- The selection is random . In a company with 160 employees, 40 persons will being asked. The selection will take place by asking every fourth person, chosen from an alphabetical list.
- If the sampling is claimed to be "representative", who / what population is it representative of?
- The sampling will be representative, since representatives will be employees of the firm being screened.
- What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)
- The strategy of collection data with questionnaires, referred to "questionnaires can be effective research method, to a low cost for the study. (Denscombe, 2010, p. 169)»
- If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)
- This number is justified by explaining the chosen methods of participants. 40 persons of 160 employees will be asked.
- If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)
- The sampling will include 40 of 160 employees. In the texts it`s mentioned that "This is done for the time frame of the task".
- How long do you expect the data collection will take if done like this?
- Can not find any information that specifies how long this data collection will take.
- If the study is a qualitative study, what kinds of criteria does the author set for data saturation?
- The study consists of questions, but the text does not specify criteria for data saturation.
- Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?
- The sampling technique is very suitable for this study.
- What biases has the author identified with the selected sampling strategy, and what other biases are there?

- I cannot find any biases mentioned.
- Keep up the good work Svein - and keep up motivating me JJI am very thankful for your support!
- Regards Monica J

Re: E-learning training of new employees
by Mark Grech - Saturday, 6 December 2014, 21:25

Hi Svein,

Please find my evaluation hereunder:

1.How exactly will the proposed sampling strategy relate to the aims of this research study? (It is important to make sure that this kind of sampling will be suitable for meeting the aims.)

This mini-studying will be using non-probabilistic systematic sampling as the researcher will be selecting a sub-group of 40 persons (4th person from the list) out of a sample population of 160. I think that proposed sampling strategy is well suited to the aims of this study.

2.If the sampling is claimed to be "random", how is randomness ensured? (It is important to understand that "random" has a special meaning in sampling terminology, different from its ordinary meaning.)

In this study a sampling technique close to the principle of random selection is selected where every 4th person of the list is included. (Descombe, 28)

3.If the sampling is claimed to be "representative", who / what population is it representative of?

The sampling is claimed to be representative of the company being studied. This small subgroup is a representation of an employee as defined in the Research aim.

4.What is the name of the exact sampling technique that is going to be used? (The text should also have a reference to an exact page number in methodology literature (Denscombe, Randolph, Creswell, etc.) where that technique is explained.)

The sampling technique is a close variation to random sampling. I think that the author should mention specifically the exact sampling technique employed in the text. Reference was given.

5.If there are exact numbers in the sampling strategy (e.g. "at least 7 people will be interviewed"), is that number just made up or is it justified in some way? (No "made up" numbers should exist.)

There is mention of the exact numbers of persons who shall be asked to fill in the questionnaire. The sample size is adequate since the pragmatic approach suggests that the sample size should be greater than 30 and less than 250.

6.If the study uses automated collection of instrument data (e.g. software inputs/outputs), what kinds of biases are there, if any? (Very often the kinds of inputs planned for the test already bias the test so that it is not fair.)

This study will be collecting the needed data through questionnaires sessions rather that that data via automated tools.

7.How long do you expect the data collection will take if done like this?

These is no mention of a definite time frame. One has to keep in mind that this small study is time bound.

8.If the study is a qualitative study, what kinds of criteria does the author set for data saturation?

These is no mention of data saturation or the criteria in the text.

9.Looking at the purpose of the sample (representative / exploratory), how suitable is the actual sampling technique for that purpose?

There is no explicit mention whether the researcher aims at obtaining a representative or exploratory sample of employees.

10.What biases has the author identified with the selected sampling strategy, and what other biases are there?

The biasing factors the researcher has identified in his study are - the human factor, the respondents misunderstanding questions or the respondents opting not to answer parts of the questionnaire. One could add the questionnaires may be easily designed in a way that it directs respondents towards the researcher's way of thinking.

Sample post and review: Task 5A.2. And Task 5B.2.

Data Collection Protocol
by Elias Ekenberg - Thursday, 4 December 2014, 00:17

Data collection protocol
This questionnaire consists of 7 predefined answers, in which the respondent chooses the best match according to the scale never/completely disagree - often/fully agree, as well as 3 open-ended questions, where the respondent are asked to describe the opinions or experiences on the subject.
Gender: Male ☐ Female ☐
Age: 18-23 ☐ 24-29 ☐
1. How often do you read or view news?

Never	Rarely	Sometimes	Usually	Often

2. How do you prefer to access news from established news agencies? (You may choose more than one option)

Newspaper	TV	Online newspaper	Twitter	Facebook	Google	Radio	Other (please write what platform)
☐	☐	☐	☐	☐	☐	☐	_____

3. Traditional media (e.g. newspaper, TV, webpage of the news agency) offers a versatile news reporting.

Completely disagree	Mostly disagree	Neither agree or disagree	Mostly agree	Fully agree

4. Social media (e.g. Twitter or Facebook) offers a versatile news reporting.

Completely disagree	Mostly disagree	Neither agree or disagree	Mostly agree	Fully agree

5. If you read 10 news articles, approximately how many of them are accessed from social media?

0 1 2 3 4 5 6 7 8 9 10

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

6. A. If you find an article interesting, do you share it with your friends?

Never	Rarely	Sometimes	Usually	Often

6. B. If you share it, how is this usually done?

_____

_____

_____

7. Do you share publications from established news agencies, even if the topic doesn't interests you?

Never	Rarely	Sometimes	Usually	Often

8. Why do you access news through social media?

_____

_____

9. Why do you access news through traditional media?

_____

_____

Re: Data Collection Protocol
by Ivan Pennisi - Thursday, 4 December 2014, 02:00

·Looking at the *kinds* of data collected by this protocol (structured / semi-structured / unstructured or closed / open or qualitative / quantitative), to what extent it could be used to answer the research questions? (Is the data *of the right kind* for the research problem?)

This type of data collection can answer to the research question. "The purpose of this study is to explore what aspects those influence young adults (ages 18-29) to choose social media as the primary news reading and sharing platform."

·Can you come up with how the questions / measurements could help to answer the research questions?

·Which of the questions / measurements in the protocol are the least related to the research questions? Why? Could they be improved?

·Which of the questions / measurements in the protocol are the most related to the research questions?

·1. How does young adult use social media in terms of news reading and sharing?

This research question can be answered by a full analysis of the whole survey, but from my view, Question 2 and 6B have a key rule.

·a. How does young adults access published news from established news agencies?

Question 2 answers to this point - this gives the information about they access.

·b. What are the most common ways to share published news from established news agencies?

Question 6A, 6B and 7 - those give the idea of how the sharing is managed

·c. Are there any gender differences?

The participants will define their gender at the beginning of the questionnaire. From there difference can be identified. I think that could become a huge work if you will receive many replies to your survey.

I think that the questionnaire is well designed and can answer to the research question.

·How are the questions / measurements justified? (Are they just made up by the researcher or do they arise from the literature or the research rationale? For instance, if gender does not seem to be relevant to the research problem, don't ask if the respondents are male or female.)
The question are made up by the researcher.
·How well are the questions justified by real details about the context of research? (Sometimes researchers haven't done enough work on finding out what the really relevant questions are...)
The questions are justified by real details about the context of the research. The question related to the Age gives no impact on the research. I understand that the participants are between 18-29 years old.
·What equipment is going to be used and is it going to be suitable for collecting the data?
I think that the collection will be done using electronic sheet such as excel
·To what extent is the questions / measurements are biased or leading? (Often we unintentionally ask leading questions and measure biased things, because we have some preconception about what's going on.)
The question are leading
·Are there any questions / measurements that seem obvious / irrelevant / naive?
The age seems to be irrelevant, if I'm not wrong
·Does the questionnaire have a) clear layout; b) explanation of the purpose of the study; c) informed consent; d) researcher's contact information; e) instructions for filling the questionnaire; f) thanks at the end?

The layout is clear but there is no explanation of the study, informed consent, contacts instructions and thanks. I think that I have also add some particular.

·Are there questions that ask two questions in one? (Don't expect to be able to find out anything useful with questions like "Was the*iStudy3* system useful for your study or were there usability problems?")

There is no strange question

·Are there loaded questions, or questions that have implicit assumptions ("Have you quit doing drugs?")

No implicit assumption

·Are the kinds of data (nominal, ordinal, interval, discrete) proper for answering the research questions?

The data are discrete.

Good Luck

Re: Data Collection Protocol
by Alexandros Theodoridis - Monday, 8 December 2014, 00:00

Looking at the *kinds* of data collected by this protocol (structured / semi-structured / unstructured or closed / open or qualitative / quantitative), to what extent it could be used to answer the research questions?

As we can see from previous pos, the purpose of the study is: <<to explore what aspects that influence young adults (ages 18-29) to choose social media as the primary news reading and sharing platform>>.

The data collected by this protocol can answer the research questions, but not in total. I think that a questionnaire of 9 questions, is very difficult to provide answers for all 4 research questions.

Can you come up with how the questions / measurements could help to answer the research questions?

From what I noticed, the biggest percentage of the questions (1,3,4,5,6,8) is usable only for the main research question.

The others are: (2,8,9) for a and (7) for b. For c question there is only a general meaning that can be extracted. Not all the questions are accurate, but can provide adequate results.

Which of the questions / measurements in the protocol are the most related to the research questions?

The analysis of the questions is this:

For basic research question are: 1,3,4,5,6,8
For a: 2,8,9
For b: 7
and for D none. Only general results we can extract.

Which of the questions / measurements in the protocol are the least related to the research questions? Why? Could they be improved?

I think that 3 and 4 are the least related to the research questions. The talk about traditional media that don't have direct relation with social media. Also reporting is not useful in this research.

How are the questions / measurements justified?

The questions are made up by the researcher but the biggest percentage of them arises from the research rationale.

How well are the questions justified by real details about the context of research? (Sometimes researchers haven't done enough work on finding out what the really relevant questions are...)

Some of the questions are justified by real details about the context of research. On the other hand, questions 3 and 4 don't have direct relation with the research.

What equipment is going to be used and is it going to be suitable for collecting the data?

Special software will be used like microsoft office. Nothing extreme.

To what extent are the questions / measurements are biased or leading?

The questions are not biased or leading, as they give a lot of alternatives and allow to the participants to refer something else that the ones stated. The only that we can say is that questions 8 and 9 take as a certainty that young people of 18-29 y.o. access news either by social media or with traditional media.

Are there any questions / measurements that seem obvious / irrelevant / naive?

I think that the age tabs have no meaning. It is obvious that the age is 18-29 of the participants.

Does the questionnaire have a) clear layout; b) explanation of the purpose of the study; c) informed consent; d) researcher's contact information; e) instructions for filling the questionnaire; f) thanks at the end?

a)No, b) No, c) No, d)No, e) Yes, f)No.

I think that the author provided just the questions not a final copy of it.

Are there questions that ask two questions in one?

No, there are not such kind of problems. The questions are accurate and centered in one subject.

Are there loaded questions, or questions that have implicit assumptions ("Have you quit doing drugs?")

The first one: How often do you read or view news?
It takes as a certainty that he/she reads news.

Are the kinds of data (nominal, ordinal, interval, discrete) proper for answering the research questions?

Not completely but they are on the right track. You need more questions for your questionnaire.

Assignment 06. Data Analysis

This week you should have a data collection plan ready. So first, you can start your data collection. Read the instructions below well, though! In the previous years students have helped their peers in this course, so we created a forum below for posting requests for help with data collection. While collecting data, keep very good notes of what exactly did you do, so that you can later report the actual data collection procedure exactly as it happened.

Second, data itself does not answer any research questions. In order to answer research questions, data must be analyzed and interpreted. If all the previous steps are done coherently, data analysis can produce results that answer the research questions and meet the aims of research. This week's task is to create a plan for data analysis (theories, procedures, and tools). There are a variety of free tools for analysis of data, both quantitative and qualitative. Please note that Microsoft Word is not a data analysis tool (every year someone wants to use it for "analysis.") No analysis need to be done yet (the data is still being collected) but the data analysis procedure and tools should be clear for when the data collection is finished.

Each type of data has its typical methods for analysis, but analysis and collection methods can be mixed and combined, too. To make it simple, we do not recommend multiple angles of analysis in this course (for instance, don't mix qualitative and quantitative analysis), unless that can be done relatively effortlessly and easily.

Readings:

1. Chapter 5 in Randolph (2008) (The analysis of educational technology research data) (7pp.)
2. Pages 235-240 in Denscombe (2010) (Introduction to analysis) (6pp.)
3. Pages 241-259 in Denscombe (2010) (Chapter 13: Analysis of quantitative data) (19pp.)
4. Pages 272-294 in Denscombe (2010) (Chapter 14: Analysis of qualitative data) (23pp.)

Video Material:

1. Preparing for Data Analysis (*There are some wrong information in the video, see* **Errata**)
2. Quantitative analysis of quantitative data
3. Quantitative analysis of qualitative data
4. Qualitative analysis of qualitative data

Errata on Data Analysis Video: Comment from Dr. Matti Tedre, the Presenter in the videos: - *Watching now afterwards the video on data analysis, I'm not very happy with that video either. In the slide on Quant/Quali Data/Analysis quadrants, the quadrant on quantitative data / qualitative analysis, there is the question "What does it mean that 48% of respondents agreed with the claim 'there should be less homework'?".*

That question is not really a data analysis question, but the question is an interpretation question -- about interpreting the results of a quant. analysis of quant. data. A better question there could be, for instance, "Which compression algorithm produced better visual results?" or "Which retrieval algorithm produced more relevant results?"

External Material:

- Statistics Every Writer Should Know (very easy reading on basic stats)

Start Data Collection for your study

For the purposes of your mini-research, you'll need to collect some research data that you can later analyze. The data set really does not need to be large: Try to spend no more than 10 hours to data collection.

You do not have to collect all the data this week. This is just to *start* collecting data, as usually it takes more time than one week.

Task 6A. Describe Your Data Analysis Plan and Tools

Now when you know what kind of data your study will collect, you can proceed to plan for how to analyze it so that the outcomes actually respond to your problem, aims, and questions. There are a number of things to think about. For example, if the aim was to *explore* then the analysis will need to produce answers to questions like 'what' and 'how.' If the aim was to *evaluate* then the analysis will need to produce answers to questions like 'how' and 'why'. Read Denscombe's book pp.235-240 for a good introduction to the central questions of data analysis. Chapters 13 and 14 in Denscombe's book discuss quantitative and qualitative data analysis.

Do the following items:

1. Combine all your work from the previous weeks to this week's task.
2. Edit your previous texts according to the feedback you got from other course participants and your course instructor and teaching assistants.
3. Continue your previous work with a description of your data analysis plan under five headings: "**Data preparation plan**", "**Initial exploration plan**", "**Analysis plan**", "**Presentation plan**", and "**Tools**." Include exact references (incl. page numbers) to literature in your text under each heading.
4. Choose a tool that allows you to take screenshots of the data analysis process, and do a tutorial on using the tool so that you'll be ready for it in the next weeks. (Examples of qualitative data analysis tools include Atlas.TI and Dedoose, and many others. Examples of quantitative data analysis tools include SPSS and R. Some web-based data collection instruments provide their own tools. If you work with computer-generated data, think of what tools you can use to analyze the data, draw the appropriate charts, do comparisons, and so forth.)

5. Check your own data analysis plan against the evaluation and feedback sheet (checklist) for data analysis plan. You don't have to report your checking here, just go through the list and make sure that your work meets the checklist.
6. Submit your work in the

Learning objectives: 1) To prepare for rigorous data analysis. 2) To understand the elements of analysis and how they are connected to the rest of the study. 3) To get acquainted with one data analysis software.
Estimated time to finish: 10 hours
Mandatory: Required for three points in [U7] in the Final Report Grading Criteria. Also highly relevant to [U8].

Task 6B. Review Two Data Analysis Plans

After you have submitted your own work to forum "6A. Describe your data analysis plan and tools", evaluate two other participants' work using the checklist for data analysis plan. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.
Be sure you are accurate in completing your reviews. In your review, please offer positive feedback and suggestions for improvement to your peers (see the videos about peer reviews). They are learning, just as you are. You may describe how your answer differed from theirs, and what you expected to see.
When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.

Learning objectives: 1) To be able to critically evaluate data analysis plan in research studies. 2) To be able to discern and scrutinize data analysis concepts in practical, real studies.
Estimated time to finish: 4 hours

Checklist for data analysis

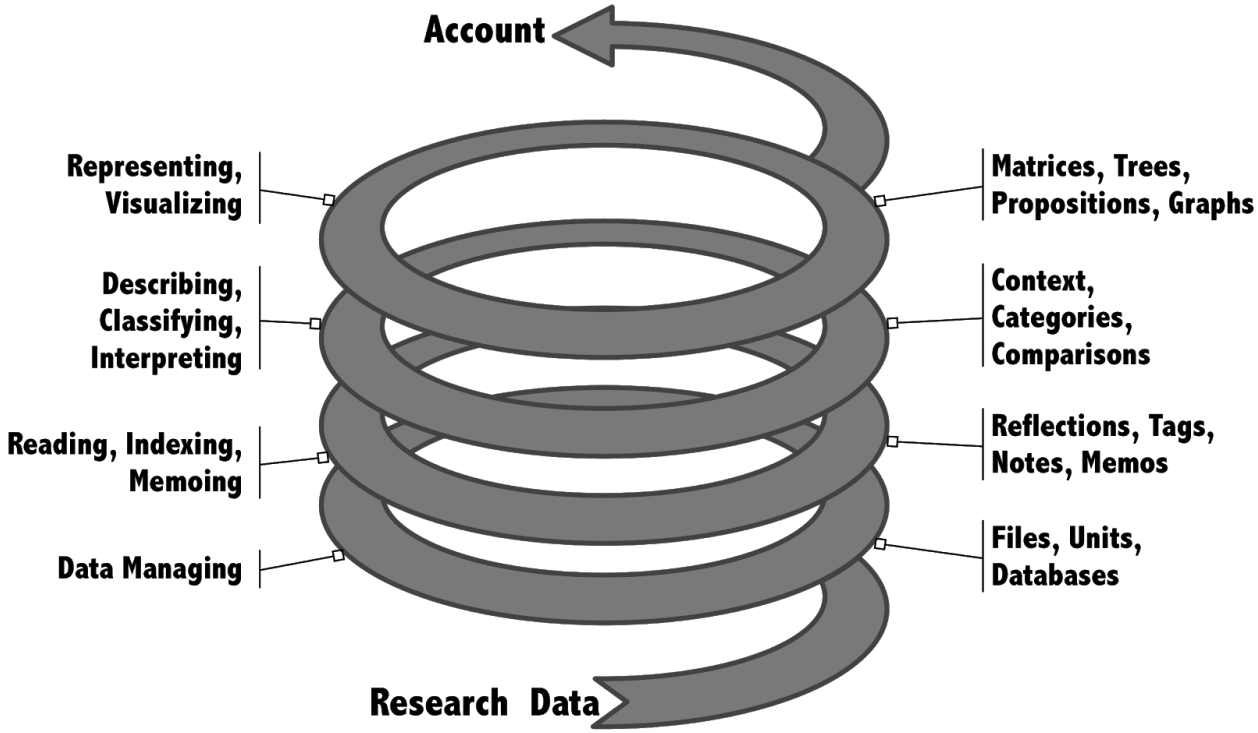
You can use the following checklist to think about your plan for each stage of the data analysis. There should be five subheadings: "Data preparation plan", "Initial exploration plan", "Analysis plan", "Presentation plan", and "Tools." Not all those subheadings will contain a lot of text, but from them it should come clear that the data analysis is *planned* and *rigorous* (follows some established procedures, tools, and practices). Note that under each heading there should be a number of references to methodology literature.

- Is the **data preparation plan** described so well that an outsider would be able to follow it without assistance and prepare the data for analysis? How much time will you expect the researcher to spend in each step of the data preparation plan?

- Which elements of the data preparation plan have the highest risk of failing or causing problems?
- What alternative tools (software, paper and pen procedures, or any other tools) could you recommend for data preparation plan?
- In the **initial exploration plan**, can you come up with any other ideas for how to quickly get a good idea of obvious trends in quant. research (maybe quick-and-dirty visualization of the data in some particular way?) or recurring themes in quali. research (maybe doing a word cloud or some other automatic analysis of the data?)
- Is the **analysis plan** described so clearly that there is no ambiguity about how it will be done? In your own words, how would you describe what the researcher will do at each step of the analysis?
- Is each step in analysis plan supported by a plan of how the analysis tool will be used to implement that step? If you look into the literature references in the analysis, do the indicated pages in the reference book actually describe how to do that analysis?
- What, in your opinion, are the most probable findings that the **presentation plan** *should* try to bring up in the analyzed data?
- If the study is quantitative, which visualization tools would *you* use for presenting the data? (Which software, and which kinds of visualizations--tables, bar charts, pie charts, scatter plots, etc.)
- If the study is qualitative, which kinds of mechanisms would *you* use for presenting the data? (Does it look like it would benefit from pictures, quotations, drawn illustrations, figures, tables, or something else?)
- What *added value* does visualization (diagrams, pictures, tables, tag clouds of codes, etc.) bring to the research report?
- Are the **software tools** that the text mentions suitable for this kind of analysis with this kind of data? (If the study is qualitative, do the proposed software (like Dedoose or Atlas.TI) have the proper functionalities for properly doing the job? If the study is quantitative, can the software (like SPSS or R) do what they are supposed to do in this study?) (By the way, every year someone says that they will use MS Word for data analysis. But seriously, MS Word is not a data analysis tool, and if there are proper tools available, you should use them. I've never seen a methodology textbook that recommended Word for analysis.)
- Looking at the outputs that these software tools produce, to what extent will that output be able to provide answers to the research questions?

For B.Sc./M.Sc. theses and real research studies, data is often analyzed against some **theoretical and conceptual framework**. In this course's small-scale study, that theoretical / conceptual framework is not necessary, but it will not hurt to have it, either. See the video on "the role of theory".

For qualitative analysis of data, Creswell provided the following account of how qualitative data analysis should proceed. For quantitative analysis, see Denscombe's book, Chapter 13.



Writing Warning: Stating the obvious

If you look at the grading criteria of MSc theses, you'll find an interesting passage in the instructions column of [U6] (Choice of Research Method): "*There should not be long, general descriptions of research strategies and methods that are only summations from method literature without connections to the thesis topic*." Now what does that mean?

It's a really common thing to see M.Sc. and B.Sc. theses (even Ph.D. theses!) where methodology is not described really in relation to the work in the thesis. Perhaps because methodology isn't a very thoroughly understood topic, the method section is often summarized from books, as a kind of a short synopsis or short summary of what research methods are. That always strikes the reviewers as not a very mature kind of writing. Compare the two methods sections below:

Thesis 1: ***Research paper horror***	*Thesis 2: Not especially great but* ***much better***
Wikipedia (2013) defines "methodology" as the "systematic, theoretical analysis of the methods applied to a field of study, or the theoretical analysis of the body of methods and principles associated with a branch of knowledge". Methods can be divided into qualitative and quantitative. Qualitative research is "Understanding of human behavior and the	This research study was aimed at exploring how a group of elderly users at Senior Club approach new technology. As an exploratory study, rich data about users' approaches was needed. Woolf (1998) listed participant observation and interviews as suitable approaches to that type of exploratory research in computing research. Participant observation

reasons that govern such behavior", and it asks "broad questions and collects data in the form of words, images, video etc that is analyzed searching for themes" (Wikipedia, 2013). There are many kinds of qualitative methods for data collection, such as participant observation, non-participant observation, field notes, reflexive journals, structured interview, semi-structured interview, unstructured interview, and analysis of documents and materials (Marshall & Rossman, 1998).

"Participant observation tries to gain a close and intimate familiarity with a given group of individuals (such as a religious, occupational, sub cultural group, or a particular community) and their practices through an intensive involvement with people in their cultural environment, usually over an extended period of time" (Jebediah, 2013). "A structured interview (also known as a standardized interview or a researcher-administered survey) is a quantitative research method commonly employed in survey research" (Bobbitt, 2013). It aims at making sure that all interviews are done in exactly the same order. Wikipedia defines grounded theory as "a systematic methodology in the social sciences involving the discovery of theory through the analysis of data." "Grounded theory method is a research method which operates almost in a reverse fashion from traditional social science research. Rather than beginning with a hypothesis, the first step is data collection, through a variety of methods. From the data collected, the key points are marked with a series of codes, which are extracted from the text. The codes are grouped into similar concepts in order to make them more workable. From these concepts, categories are formed, which are the basis for the creation of a theory, or a reverse engineered hypothesis. This contradicts the traditional model of research, where the researcher chooses a theoretical framework, and only then applies this model to the phenomenon to be studied." (Homer, 2013). This research used structured

provides descriptive information about how the users actually use technology, but leaves out *why* they engage with technology the way they do (Plath, 2002). By using interviews the researcher is able to ask questions about *why* do the users work the way they do, but not see *how* they actually work (Plath, 2002). Because this study was aimed at finding out how users actually approached technology, observation was selected as the data collection method.

There are a number of varieties for observation. One dividing line is between unobtrusive observation and obtrusive observation. In unobtrusive observation, the researcher does not interact with the participants, while in obtrusive observation observer may, for instance, interrupt the participants for questions (Rich, 2013). As this research study wanted to only see the *how* of technology use, unobtrusive observation was selected.

interviews.	

Neither of the above examples is perfect by any means.

However, the example of Thesis 2 (it's a made up example) is better for a number of reasons:

- It talks about methods *in terms of that research study*, not in general terms.
- It doesn't look like a "methodology for beginners" textbook.
- It *justifies* the research method choice.

The example of Thesis 1 is bad for similar reasons:

- It describes methods but doesn't talk about why are they suitable for that particular study.
- It has long, general descriptions of research strategies and methods that are only summations from method literature without connections to the thesis topic. (See, this is what the grading criteria warned of!)
- It uses long, direct quotations. That gives the reader a feeling that maybe the author does not really understand what he/she is talking about.
- It doesn't justify the method selection. It rambles on about what methods are, and in the end suddenly pops up "we used interviews".

Maybe the method selection in Thesis 2 is not very well justified (much more work is needed!) but the approach it takes to describing methodology is what we'd like to see. Note that length is not a value per se. Thesis 2 is much better than Thesis 1 even though Thesis 1 is almost double as long.

Sample Post and Review:

Instructor support in distance courses contra on-campus courses
by Stephanie Skogsberg - Wednesday, 10 December 2014, 23:17

Introduction

Research background

During the 21st century the internet and functions of the WWW environment has created endless possibilities for organizations and individuals in communicating, networking, retrieving information and much more(Prusak & Matson, 2006). These possibilities regard the educational world as well, and have facilitated students and teachers in learning and teaching in many ways(Okamoto, Anma, Nagata, & Kayama, 2009). For example, many University courses are today offered to be taken on distance(DSV, 2013).

This subject is called e-learning and creates great flexibility for students. For example, they may work simultaneously or divide their time as they wish(Okamoto, Anma, Nagata, & Kayama, 2009). However, criticism has been turned against e-learning from various researchers and scholars. They argue, amongst other things, that due to a loss of student collaboration and interaction, tacit knowledge is hard to share (Prusak & Matson, 2006; Biggs, 2006). On the other hand, the aspect of whether students perceive the instructors support as good or bad varies. Biggs (2006) study shows that the distance students, compared to the traditional or hybrid courses' (both distance and on-campus) students, were least satisfied with the instructor support. Nevertheless, in Gilbert, Morton, and Rowley's (2007) study, the results show the opposite. Students acctually were more satisfied with the instructors learning support in distance courses than in traditional on-campus courses(Gilbert, Morton, & Rowley, 2007).

This controversy of whether instructors support is perceived more satisfying in distance courses or in on-campus courses thus means that further investigation is needed for the improvement of educational technology in today's University environments, as instructor support is crucial for the enhanced learning of students. This problem is investigated in this study through a case study at Stockholm University's department of Computer and Systems Science as this department also teaches courses on distance and on-campus, and that no previous research has been made on this subject at this department. Although these results only may be applicable to this specific case and Stockholm university, hopefully, this study may give clarity on students thoughts of whether the instructor support is better in distance courses or on-campus courses, and thereby contribute to the research field with a better understanding of which of the two courses instructor support needs improvement.

Based on the above stated problem of ambiguity in students' thoughts on instructor support in distance courses versus on-campus courses, this study aims to explore how Stockholm University master students at the Department of Computer and Systems Sciences (DSV) perceive the instructor support of their distance courses contra on-campus courses. This will be done as a case study with three one-to-one, semi-structured interviews for collecting data in order to create an enhanced understanding of this subject by analyzing the thoughts and opinion of each interviewee.

Research Objectives

The objectives of this study, based on reaching the main aim, are to identify similar thoughts and opinions of students on whether the instructor support in distance contra on-campus courses is better. Also, the objective is to clarify the advantages and disadvantages with distance courses, as well as on-campus courses at DSV. Furthermore, the objective is to gain insight of students' preferences on instructor support in order to assess the advantages and disadvantages of the traditional and on-campus courses.

Research Questions

How do DSV master students perceive the instructor support between distance courses contra on-campus courses?

Sub questions:

-Are there any differences between the instructor support and engagement?

-Which educational technology is preferable by the students at this department based on the instructor support?

Research Limitations

This study is conducted through a case study at one specific University and department in order to focus on getting a deeper understanding of a few master students on the subject. The study is therefore limited to only master students (as they take on more distance courses in general than bachelor students) at a specific department, the department of Computer and Systems Sciences, at one particular University, Stockholm University. This also means that the study is limited to Sweden and Stockholm. Another limitation of this study is due to time constraints and low budget, which implies that some strategies could not be chosen, even if they were more appropriate.

These limitations imply that the results may be hard to generalize to other departments, universities, and countries, and therefore the results shall rather be seen as exploratory findings that future research could use and build upon for further research in this area. Hopefully though, some of the results may be useful for future research and contribute to the field of e-learning, as well as the instructors at DSV.

Methodology

The aim of empirical research is to describe, explain and predict a phenomenon. In contrast to design research, which aims at changing the world and generating artifacts, empirical research seeks to understand the world (Johannesson & Perjons, 2012, p. 1). This is aligned with the objectives of this study and therefore, empirical findings are needed to support the research.

Empirical research can be conducted in many ways, for example through a case study, survey or experiment strategy, and often embraces either a quantitative or qualitative approach (Creswell, 2003, p. 12-18) The qualitative approach better suited this study as it primarily focuses on exploratory research and is used to gain a deeper understanding of opinions, underlying reasons and motivations (Bryman, 2008). For this qualitative study, which seeks to explore and understand master students at DSV's thoughts on instructor support in distance courses contra on-campus courses, the most suitable approach was the qualitative and the strategy was case study as it lets the researcher focus on opinions, relations and processes as well as spotlight one specific instance in its natural setting (Denscombe, 1998, p. 35-37).

Data collection methods

A case study can involve many different data collection methods, such as observation, questionnaires and interviews (Randolph, 2008, p. 53). For this study's objectives, all of the

mentioned data collection methods above are suitable. However, due to the time frame and focus of the study, only one method is needed and will be sufficient. Moreover, when deciding upon which method to use, it is important to consider that the choice is not about which one is the best, but rather about which one is aligned with the research aim, objectives and questions (Randolph, 2008, p. 73-74).

Observation

The observation method collects data by observing a person, group or some other type of instance in their natural setting in order to investigate events, behaviors or possible physical characteristics. When conducting observations, the researcher may choose to conduct it as a covert observation, which means that the participants are aware of the observant or overt observation, which is the opposite. Also, observations can be direct or indirect, which means that the observant/researcher observes the chosen instance in its actual work process or observes the instance in the results of the process (Denscombe, 1998, p. 206-215).

The main benefits with observation are that directly registers what the specific instance actually does, and not what it says it does. Furthermore, it is considered an effective and reliable method as it gathers a great deal of data in a short time period. The reliability increases as people who are being investigated in covert observation act more naturally and real, this however faces some ethical issues (Denscombe, 1998, p. 214-215).

This study could have been conducted through observations, as the researcher then could have observed the learning process of students taking both distance and on-campus courses and thereafter evaluated their grades and knowledge. The advantage of this would have been that a more honest answer could have been given as the actual learning process would be reviewed. However, this would have been rather time consuming and, most importantly, it could have crossed some ethical principles. Also, the results would not tell *why* students prefer the instructor support in either on-campus or distance courses, and as the observant is constantly observing, this could disturb the natural setting which could lead to a less reliable result (Denscombe, 1998, p. 214-215). Therefore, this method was not chosen for this study.

Questionnaires

Questionnaires are mostly used when the researcher aims at collecting large amounts of data. They are presented as documents with the exact same questions most often provided to a number of participants either through the internet, by mail or by post (Johannesson & Perjons, 2012, p. 26). This method is beneficial as it hardly costs anything, can be done in a limited time frame and enables the researcher to contact a great deal of participants. However, as questionnaires do not offer any physical contact between participants and researcher, which indicates that the questions may be wrongly interpreted and no further discussion of questions are possible (Johannesson & Perjons, 2012, p. 58).

This case study could have been conducted by sending out a large number of questionnaires to many master students at DSV in order to provide a more reliable and generalizable result as more participants are involved in the study. Also, it would have fit the limited time-frame and low budget. However, it would not provide the in-depth understanding of each participant's specific

thoughts and opinions, which is this study's aim, and therefore this was not the most suitable data collection method.

Interviews

The data collection method interview is preferable when the researcher aims at collecting a deeper knowledge of a specific area and when the researcher wants a face-to-face contact in order to eliminate own interpretations from participants on questions (Randolph, 2008, p.78). These factors are very well aligned with the aim of this study; to explore how Stockholm University master students at the Department of Computer and Systems Sciences (DSV) perceive the instructor support of their distance courses contra on-campus courses.

There are several types of interviews; structured, semi-structured and unstructured, and they can be conducted in several ways, for example by group interviews, one-to-one interviews or phone interviews (Denscombe, 1998, p. 175-178).

The main differences between the structured, semi-structured and unstructured interview is the varying amount of control of the interview. In structured interviews, the questions are predefined and can be likened with questionnaires that instead are conducted face-to-face. The semi-structured type is freer to its nature and less controlled than the structured type, but still follows some specific questions and lets the interview take on an explicit focus. The unstructured interview goes further in the direction of keeping an open interview where interviewees may express their opinions freely, but compared to the semi-structured interview it does not keep the same specific focus (Denscombe, 1998, p. 175-176). Depending on the research aim and objectives, one of the interview types can be more or less suitable.

Moreover, the differences between phone interviews, group interviews or one-to-one interviews are of physical character. Phone interviews are good when the researcher and interviewees have no chance of meeting. The group interview allows the researcher to engage many interviewees at a time and provides multiple views and opinions on a subject as a discussion arises. The one-to-one interview is, however, preferable in many aspects; it is more controllable, easier to conduct in the sense that only one person needs to be booked at a time and transcribing is done more easily as there are only two persons talking in the recordings (Denscombe, 1998, p. 176-178). Compared to the group interview, one-to-one interviews are much more secure for the participant as their identity can be hidden from others than the researcher and thereby aligned with the ethical principles of research (Bryman, 2008).

Choice of data collection method

This study will be conducted through three semi-structured one-to-one interviews as it is best aligned with the aim of this study since it allows the author to gain an in-depth understanding of the interviewees' own thoughts on a specific focus; instructor support in the different learning styles (Johannesson & Perjons, 2012, p. 26,58).

This study could have been conducted through a case study with questionnaires. This would have been good in the sense that more participants would be included which could give a more generalizable answer (Bryman, 2008). But, some important aspects that one-to-one semi-structured interviews provide, which questionnaires do not, would be lost, for example, the

chance to explain ambiguous or unclear questions, the chance to ask further questions on a topic and gain access to information that participants would not reveal on paper. As this study seeks to know more on the opinions of the instructor support in the participants' courses they have attended or are currently attending, a questionnaire could be frightening and dishonest answers probably would appear, due to the uncertainty if the instructor would know of the answers. The interview instead creates a possibility for each participant to explain themselves and their opinions in-depth (Randolph, 2008, p. 78).

Even though transcribing interviews may be time-consuming, this data collection method is preferable as to it reduces the risk of misunderstanding the question and lets the researcher ask further, supplementary questions on the subject to get a greater insight. Therefore, the advantages of this interview style suggest that this is the most appropriate data collection method for this study. This style fits the time frame set up for this aim as two participants are enough for this small-scale project, even though there might be problems with the generalisability (Johannesson & Perjons, 2012, p. 26,58).

Selecting Participants

This study focuses on exploratory samples as it seeks a depth of insight in the participants' opinions and thoughts to be able to explore the perception of instructor support in distance courses contra on-campus courses at DSV. Compared to the representative sample, which seeks to represent this phenomenon with typical examples to make conclusion of the general population, the exploratory does not require the same sample amount, and therefore is more suitable for this study (Denscombe, 1998, p. 24).

The sample strategy chosen for this study is called cumulative sampling strategy as to the amount of participants needed was not decided in advance. Instead, the participants in this study must fit the aim of this qualitative case study, which indicates that Stockholm University DSV master students that have taken both distance and on-campus courses with opinions on the instructors support are the population of this study. The sample of participants chosen to conduct the data collection is based on the non-probability selection of participants referred to as purposive sampling technique, a qualitative sampling technique, which implies that specific units are chosen that are aligned with the studies objectives (Denscombe, 1998, p. 30). Also, the chosen participants are rather homogenous as they all have the same qualifications; they are all master students of computer and systems science at DSV and have taken the same distance and on-campus courses. The choice of non-probability sampling is due to the fact that this is a small-scale study and it would not be feasible to conduct probability sampling with a larger scale due to the time frame and budget restrictions (Denscombe, 1998, p. 17).

The choice of interviewing master students of DSV as the sampling frame was deliberate and the reason is that they are more likely to have taken more distance and on-campus courses for the simple reason to that they have studied for a longer time. For this study, and for the case of DSV, this purposive sampling technique is accurate as it is aligned with the small-scale selection which is needed for this study which no cost and little effort, since DSV students are easily accessible for the author (Bryman, 2008, p. 392-393).

However, one could argue that the results become biased if applied to another university as the teaching and support may differ there in comparison with this studies sampling frame

Data Saturation

As explained earlier, the size of the sample frame is decided by a cumulative approach which indicates that it is not decided in advance how many would be interviewed (Denscombe, 1998, p. 41). This is rather decided when the author felt that enough information had been collected to answer the research question and objectives. This is also called "data saturation" (Bryman, 2008, p. 394-395). This was reached when three students had been interviewed, as the author felt that more data was not needed for this small-scale study. As Mason (2010, p. 2-3) suggests, case studies do not need more than 5 interviews, which is accurate in this case. As this exploratory study only wishes to explore the opinions of DSV master students, the focus is narrow and more interviews than three was not needed as more interviews would not give the author much more information regarding the importance of understanding the in-depth thoughts and opinions on the subject from the students.

Data Collection Protocol - Interviews

Since the chosen data collection method for this study is one-to-one, semi-structured interviews, it allows the researcher to ask further, supplementary questions throughout the interview. Therefore, the interview template below is more of a guideline for the researcher and interviewee in order to follow the focus of the study, the perception of instructor support in distance courses contra on-campus courses. The questions are rather open-ended to allow a free and open environment in order for the interviewee to feel comfortable about speaking generally. The first three questions are only asked in order for the researcher to acknowledge that the interviewee will be able to answer the questions properly. This should not be a problem since this has been clarified in advance, but is done as a precaution.

Schedule/Protocol

In advance of each interview, the researcher will send a draft of the interview questions and the consent for to the interviewee to have a look at. Thereafter, a meeting will be booked at a location based on the interviewee's wishes in order to make him/her more comfortable in the environment.

When the interview will take place the interviewee will first hear a short presentation about the researcher's background and the subject as well as be provided with contact information to the researcher. Thereafter, the consent form is addressed and the interviewee may tell of any thoughts they have on it. The researcher tells the interviewee of his/her rights and addresses the ethical deliberations and what the audio recording will be used for.

Please see appendix 1 for the interview template and appendix 2 for the informed consent form that has been provided to all participants.

Data Analysis Procedure

After the data collection has been conducted, it is time to gather and structure the raw data in order to make it ready for future analysis. This will thereafter make it possible to, hopefully, answer the research questions and find the results relevance to the context. The procedure of developing the raw data into context-related information is as follows:
In qualitative data analysis, four main principles need to be accounted for: that the results are directly rooted in the raw data, that careful and extensive reading of the data has to be done by the researcher, that the researcher should try to keep an objective perspective and avoid personal opinions in the analysis, and finally that this process is of iterative kind, which means that re-reading of the data and several "rounds" of analysis should be done (Denscombe, 1998, p. 287-288).

Data preparation plan

This first step in the data analysis plan includes gathering the raw data of the interviews and organizing it. The raw data is both the field notes taken by the researcher during each interview as well as the audio recordings. In order to enhance the security measures as proposed by Denscombe (1998, p. 289), copies were taken of the field notes and the audio files were saved in a separate hard drive.
The researcher thereafter started reading and transcribing the interviews, in order for future analysis and extraction of themes to be possible.

Initial Exploration Plan

As stated earlier, re-reading the gathered data (transcriptions and field notes) is crucial in qualitative studies (Denscombe, 1998, p. 287-288). This was done by the researcher to enhance understanding and eliminate any personal interpretations.

Analysis Plan

When the researcher is well-read the analysis of the data can begin. This process followed by interpreting the data and extracting codes (in the form of frequently used adjectives regarding instructor support) that are tags attached to raw data in order to create themes of the three interviews (different perceptions interviewees might have, the ones that prefer distance courses, and the ones that do not). By creating themes, the researcher can more easily find patterns that may lead to a generalized statement on whether the master students of DSV prefer the instructor support in distance-courses or in on-campus courses, and thereby analyze their perception of this and underlying reasons to the preferred choice (Bryman, 2008).

Furthermore, this process includes analyzing the credibility, transferability, dependability and conformability of the study (Denscombe, 1998 p. 296-297). These verifications will be assessed and explained in the practical approach chapter.

Presentation Plan

In this step the results of the analysis are presented. With qualitative data analysis, rich and detailed descriptions may be given to create "grounded data", which indicates that the data is based on reality and thereby, as Denscombe (1998, p. 312) puts it: "There is little scope for armchair theorizing or ideas plucked out of thin air".
The representation of the analyzed data will be structured in accordance with summaries of each interviewee's answers and thereafter a brief analysis in accordance to the separate results. Thereafter, an analysis if the themes are given and implications of the meanings that this may have.

Tools

The usage of the analysis software "Atlas.ti" was evaluated by the researcher, but due to no demo version being possible to acquire, and the unnecessary use of it due to the restricted time frame and low number of interviewees, the researcher decided to not use it. Instead, the tools used for this analysis was pen, paper, laptop, audio recorder and the MS office package.

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Appendix 1 - Interview Template

Interview with key informants

Introduction

First of all, thank you for giving me the opportunity to conduct this interview. The interview will take approximately 30 min. This conversation will be recorded by a voice recorder and the data will be used for this research purpose only. The researcher of this study will be the only one accessing the information and you will be completely anonymous.

The questions are open-ended and you are expected to speak freely. Please ask questions if anything is unclear. Stop the interview at any time if you do not want to proceed.

Please start by filling in this background information:

Are you a master student? Yes ( ) No ( )

What University and institution do you study at? .....

The interview

1.Have you taken both distance courses and on campus courses at the same advancement level?

2.If yes, did you perceive there were any differences in the instructors support between these?

3.What benefits and drawbacks are there with the instructor support in distance courses? Please provide an example.

4.What benefits and drawbacks are there with the instructor support in on-campus courses? Please provide an example.

5.Are there some specific aspects you find should be part of the instructor support in both distance courses and on-campus courses?

a.Could you rank these?

6.Do you feel there are ways the instructor support could improve or use techniques from each other in the respective?

a.What type of techniques?

7.Which course type have you preferred the instructor support in up until now? Why?

Thank you! Regards,Stephanie Skogsberg

Appendix 2 - Informed Consent Form

Consent to participate

Title of study

Students' perception on instructor support in distance courses contra on-campus courses

Identity of researcher

Name: Stephanie Skogsberg

Adress: .....

Contact information: +4673*******, Stephanie.skogsberg@live.com

The researcher conducting this study is a master student at Stockholm University at the department of Computer and Systems Science. This study is part of a small-scale research for the university course "Research Methods and Scientific Writing".

Information about research study

What is being investigated?

Previous research has shown controversy of whether instructors support is perceived more satisfying in distance courses or in on-campus courses in Universities. This subject needs further investigation for the improvement of educational technology in today's University environments, as instructor support is crucial for the enhanced learning of students.

The aim of this study is to get a deeper understanding of this phenomenon and hopefully find some answer to how university master students of DSV perceive instructor support in distance courses contra on-campus courses, to develop future courses.

How will the study be conducted?

This study will be conducted as a case study at DSV with a audio recordings of a few semi-structured, on-to-one interviews with master students whom have taken both distance courses and on-campus courses. This is in order to create an enhanced understanding of this

subject by analyzing the thoughts and opinion of each interviewee to further explore the differences (if any) of the instructor support in both course types.

What benefits may the study contribute with?

Hopefully this study will contribute with more knowledge in the area of educational technology and improve the instructor support of both distance courses and on-campus courses at DSV as the study provides in-depth opinions from students' opinions on these courses.

Expectation of participants

What is your role?

As a participant in this study you will be asked some questions, where an open conversation between interviewee and interviewer evolves. You are allowed to speak freely in the theme and in regard of the questions.

How much time will it take?

One hour.

Are there any benefits of being in the study?

As a participant you will be a part of the development of new practices within educational technology and the enhancement of DSVs distance and on-campus courses, which may result in your improved education.

The right to withdraw consent

This consent form is to provide you with accurate information of the study and your role within it, as well as acknowledge your rights as a participant. However, signing this form does not oblige you to conduct the interview if you do not wish so. You are also allowed to stop the interview at any time, during or after, if you do not wish to keep on participating. It is also used to assure that all participants are above 18 years old.

Confidentiality and security of data

Code of ethics

This study follows Vetenskapsrådets codes of ethics to assure the participants security. Please see reference (Vetenskapsrådet, 2002).

Security measures taken to ensure confidentiality and guarantee of anonymity

Security measures are based on Vetenskapsrådets main principles. There are no risks with participating in this study. You will only be asked to help the researcher with further research on the subject and will be anonymous if requested as you do not have to provide your name to the other participants during the group interview. The video recording will only be seen by the researcher and will be held in safe place during and after the research process. The information obtained will be kept strictly confidential and will only be used in the purpose of this study. The data will only be seen and handled by the researcher. After the study is finished, the results will be sent to each interviewee for approval and to eliminate any bias of the researcher. Thereafter, the interview results and transcripts will be stored in the private computer of the researcher and not provided to anyone else. This is done if any changes need to be made.

Please check the appropriate box below depending on your demands:

( ) I wish to be anonymous

( ) I do not wish to be anonymous

If you have any questions in preparation of the interview, please feel free to contact me by e-mail or by phone.
Stephanie Skogsberg, +4673*******, Stephanie.skogsberg@live.com
Please sign below
Participants name:_____

Participants signature:_____

Interviewers name:_____

Interviewers signature:_____

Date and location:_____

****

Re: Instructor support in distance courses contra on-campus courses
by Rafael Altez Cabello - Thursday, 11 December 2014, 22:15

Hi Stephanie!

You have topic that is of interest for many students and I hope you have success, here it's the evaluation:

- **Is the data preparation plan described so well that an outsider would be able to follow it without assistance and prepare the data for analysis? How much time will you expect the researcher to spend in each step of the data preparation plan?**

It's understandable that the researcher will first gather the data through notes and audio recordings and then transcribe them into a desirable text format so that it can be easier to analyse it later when the data gathering is finished. It's difficult to know how much time the plan might take since there's not knowledge about how many interviewees the researcher will choose as cumulative sampling is applied. But considering that the timeline for the study is short so it should not take more than 2 weeks.

- **Which elements of the data preparation plan have the highest risk of failing or causing problems?**

Mainly that the researcher doesn't find enough participants for the study or that the audio recordings don't work as they should after the interview sessions (therefore the recording device should be tested first).

- **What alternative tools (software, paper and pen procedures, or any other tools) could you recommend for data preparation plan?**

Using recording devices (such as mobiles) is obviously a clear choice. In case that the interviewee doesn't want to be recorded so notes should be taken instead. (either by paper or by computer)

- **In the initial exploration plan, can you come up with any other ideas for how to quickly get a good idea of recurring themes in quali. research (maybe doing a word cloud or some other automatic analysis of the data?)**

Unfortunately I cannot give a good suggestion for this, but using the search engine for finding words in the text (by using the command "ctrl + f" if you use google documents or "ctrl + b" if you use microsoft word) could be a good idea to find relevant or irrelevant words in the whole text of the gathered data.

- **Is the analysis plan described so clearly that there is no ambiguity about how it will be done? In your own words, how would you describe what the researcher will do at each step of the analysis?**

As long as I understand so the researcher will first try to find common or frequent adjectives in the text in order to group the text somehow in categories/themes that might be related to these adjectives. The categories/themes could be described according to the researcher for example as the students that prefer or don't prefer distance studies. The description seems to be enough for now but it will have to be explained more in detail in the later phase.

- **Is each step in analysis plan supported by a plan of how the analysis tool will be used to implement that step? If you look into the literature references in the analysis, do the indicated pages in the reference book actually describe how to do that analysis?**

No, there is not a description about how analysis tools will support the analysis plan.

- **What, in your opinion, are the most probable findings that the presentation plan *should* try to bring up in the analyzed data?**

The most probable findings could be for example how many students prefer distance courses and how many don't. It might also find if the age of the students could influence in the preference of study method (distance or non-distance).

- **If the study is qualitative, which kinds of mechanisms would *you* use for presenting the data? (Does it look like it would benefit from pictures, quotations, drawn illustrations, figures, tables, or something else?)**

According to the researcher, detailed and structured text description in form of categories/themes is applied . I would prefer myself to also add quotations from the gathered text in the analysis, so that relevant parts of the gathered text (like some important opinions from students) are taken into account when they are analysed.

- **What *added value* does visualization (diagrams, pictures, tables, tag clouds of codes, etc.) bring to the research report?**

According to the researcher, the added value might be a generalized statement on whether the master students of DSV prefer the instructor support in distance-courses or in on-campus courses.

- **Are the software tools that the text mentions suitable for this kind of analysis with this kind of data? (If the study is qualitative, do the proposed software (like Dedoose or Atlas.TI) have the proper functionalities for properly doing the job?)**
-

By using pen, paper, laptop, audio recorder and MS office might be enough if the study is short.

- **Looking at the outputs that these software tools produce, to what extent will that output be able to provide answers to the research questions?**

Pen, paper, laptop, audio recorder and MS office might be enough to provide a good output from the interviewees, so that the research questions are in some good extent answered.

Wish you good luck with your research!
/Rafael

****

Re: Instructor support in distance courses contra on-campus courses
by Filip Johansson - Friday, 12 December 2014, 17:56

Hi Stephanie,
As I have gotten to know your work quite well at this point I thought it would be good to continue. It seems like you put in a lot work and thought into it and therefore its also more interesting to review.

Is the data preparation plan described so well that an outsider would be able to follow it without assistance and prepare the data for analysis? How much time will you expect the researcher to spend in each step of the data preparation plan?

Yes, it is well-described in my opinion. There are room for more details and descriptions but I think that the level of description/detail is sufficient as the procedure is quite simple. The researcher explains how audio files will be stored on different hard drives and these recordings will then be transcribed into written text.
The exact time for transcribing (which is the main step in data preparation in this study) is hard to say but I would guess that each 30 min interview would take around 2 hours to transcribe. If three interviews will/has been conducted then it would take somewhere around 6 hours. The most important thing is that the researcher knows and prepares for this time-consuming task.

Which elements of the data preparation plan have the highest risk of failing or causing problems?

As Denscombe (among others) points out, the researcher needs to pay attention and be thorough when transcribing data. The "human factor" is involved many parts of qualitative studies and transcribing is one of them. I know that the author of this study is well aware of this and also one solution to make sure that transcribing of data is as accurate ass possible - namely, letting the interview person (interviewee) go through the transcribed data to check that that it is correctly understood by the researcher. Other problems that could arise is problems with the audio recording but the researcher already has counter this potential problem as notes will be taken during the interview and the audio recordings has been stored on different devices.

What alternative tools (software, paper and pen procedures, or any other tools) could you recommend for data preparation plan?

I could recommend the atlas.ti. I have tried it out and experienced a little bit with it. However, I still haven't had the time to do it thoroughly so I do not want to say to much yet, but so far, I have found it useful for coding. It enables a good overview of the codes made, frequencies of the codes etc. However, I also think that using word and excel would do fine.

In the initial exploration plan, can you come up with any other ideas for how to quickly get a good idea of obvious trends in quant. research (maybe quick-and-dirty visualization of the data in some particular way?) or recurring themes in quali. research (maybe doing a word cloud or some other automatic analysis of the data?)

So far I only have had the time to try out some of the functions that atlas.ti offers. However, an idea could be to use the Word Cruncher function or the Co-occurrences function in atlas.ti. Word Cruncher shows frequencies of word across the document and although this study is not focusing on quantitative analysis or content analysis per say it could give a good overview of the content. Moreover, the function "Co-occurrences" could be used to easily find co-occurrences between codes.

Is the analysis plan described so clearly that there is no ambiguity about how it will be done?In your own words, how would you describe what the researcher will do at each step of the analysis?

Personally I think I have a clear idea of how analysis will be done. The analysis will be done through identifying themes in the data. These themes will be derived from codes from frequently used adjectives regarding instructor support. The themes will then help the researcher to find patterns that will be used to analyze the perception and the underlying reasons to the preferred choice between distance or on-campus courses.

The researcher will also analyze and discuss the credibility, transferability, dependability and conformability of the study.

Is each step in analysis plan supported by a plan of how the analysis tool will be used to implement that step? If you look into the literature references in the analysis, do the indicated pages in the reference book actually describe how to do that analysis?

I do not believe that there are any description of how the analysis tool used will support the analysis. There is a well described motivation for the tools that will be/will not be used but during the analysis plan there are no relation to these tools. In regards to references that describe how to do the chosen analysis there are many references to Denscombe.

What, in your opinion, are the most probable findings that the presentation plan should try to bring up in the analyzed data?

I think that this presentation plan will bring up some interesting rich and detailed descriptions where the identified themes will be highlighted and discussed. There will probably be some similarities and some differences between the perceptions of the different students that will act as the main points in the analyzed data.

If the study is qualitative, which kinds of mechanisms would you use for presenting the data? (Does it look like it would benefit from pictures, quotations, drawn illustrations, figures, tables, or something else?)

I would suggest using a table to present some of the main themes and the main attitudes/opinions/perceptions from the interviews. This would be a great way to give a general overview and summarize the findings.

What added value does visualization (diagrams, pictures, tables, tag clouds of codes, etc.) bring to the research report?

It will help create a good structure and will (as stated above) give a good overview of different findings. Furthermore, I believe it also will show that there is a structure and clear output from the analysis.

Are the software tools that the text mentions suitable for this kind of analysis with this kind of data?(If the study is qualitative, do the proposed software (like Dedoose or Atlas.TI) have the proper functionalities for properly doing the job?If the study is quantitative, can the software (like SPSS or R) do what they are supposed to do in this study?) (By the way, every year someone says that they will use MS Word for data analysis. But seriously, MS Word is not a data analysis tool, and if there are proper tools available, you should use them. I've never seen a methodology textbook that recommended Word for analysis.)

The researcher has evaluated the possibility to use atlas.ti but has chosen not to use it. Therefore, it is hard for me to say if the tool is suitable or not. The researcher will use the MS office package, pen, paper, laptop and audio recordings to conduct the analysis. Although I have my own opinion, the question/criteria here says that MS Word is not a data analysis tool which thus could create a possible question from a facilitator/examiner. However, it only says that MS Word is not a analysis tool and the researcher here might for example use Excel for doing parts of the analysis. Do not know how to give further comments on this matter as I am not experienced in this area.

Looking at the outputs that these software tools produce, to what extent will that output be able to provide answers to the research questions?

I do not know the possible output of the tools chosen/described so it is hard to say if that output will provide answers to the research question. However, coding, indexing, identifying teams and creating tables for analysis can be done without a tool and with the thorough and well-thought through work the author has provided so far I am confident that the researcher of this study will provide a rich and descriptive analysis that absolutely will answer the research question (although a tool is recommended in this course).

Good luck!

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Svar: Instructor support in distance courses contra on-campus courses
by Daniel Hallberg - Sunday, 14 December 2014, 19:46

First of all, thank you for your comments last week Stephanie! As you have a qualitative approach I will do my best to help you with your next stage in this study. I normally most use quantitative methods and thereby have more knowledge about that approach. Still, I will do what I can to help you succeed.

- **Is the data preparation plan described so well that an outsider would be able to follow it without assistance and prepare the data for analysis? How much time will you expect the researcher to spend in each step of the data preparation plan?**

- It is easy, and this is straightforward as you describe it, you collect the raw material by recording and notes and thereafter transcribe it for further analysis. I saw that you write about having two respect three interviewee at different places, search the text "This style fits the time frame set up for this aim as two participants are enough for this small-scale project" so you can correct it, just a note after reading the text. Time, I really do not know, however this seems to be doable due to the low number of interviewees.

- Which elements of the data preparation plan have the highest risk of failing or causing problems?

- Main risks can be that some error occurs when recording the interviews. Please try before you start the first interview.

- What alternative tools (software, paper and pen procedures, or any other tools) could you recommend for data preparation plan?

- Any tool specified for analyzing qualitative data could be used instead of using word etc. I have never tried it out so I can not help you any here. Of course, you have not too many data from numerous interviews and therefore can your method for analyzing data work for this time. However you could try some of the proposed programs to get a feel of the softwares for this type of qualitative approach.

- In the **initial exploration plan**, can you come up with any other ideas for how to quickly get a good idea of obvious trends in quant. research (maybe quick-and-dirty visualization of the data in some particular way?) or recurring themes in quali. research (maybe doing a word cloud or some other automatic analysis of the data?)

- highlight important answers during you reviewing data. Maybe some feature could be used in any software?

- Is the **analysis plan** described so clearly that there is no ambiguity about how it will be done? In your own words, how would you describe what the researcher will do at each step of the analysis?

Transcribe the data into data format, analyzing this data by identifying themes. The themes comes from codes that the researcher finds from frequently used adjectives regarding instructor support. The help from themes makes it easier to find patterns in the data and thereby analyze the interviewees perception of this and underlying reasons to the preferred choice regarding distance-courses or in on-campus courses.

- Is each step in analysis plan supported by a plan of how the analysis tool will be used to implement that step? If you look into the literature references in the analysis, do the indicated pages in the reference book actually describe how to do that analysis?

no specific analysis tool will be used.

- What, in your opinion, are the most probable findings that the **presentation plan** *should* try to bring up in the analyzed data?

You will probably highlight the identified themes and discussed different answers depending on what the preference towards studying on-site or by distance. If possible some table if there are any similarities in the answers or opposite opinion would be interesting.

- If the study is qualitative, which kinds of mechanisms would *you* use for presenting the data? (Does it look like it would benefit from pictures, quotations, drawn illustrations, figures, tables, or something else?)

Table after analyzing the data and if the result can be showed that there are any opposite answers. Quotation to some extent also.

- What *added value* does visualization (diagrams, pictures, tables, tag clouds of codes, etc.) bring to the research report?

More clear visualization of the important results.

- Are the **software tools** that the text mentions suitable for this kind of analysis with this kind of data? (If the study is qualitative, do the proposed software (like Dedoose or Atlas.TI) have the proper functionalities for properly doing the job? If the study is quantitative, can the software (like SPSS or R) do what they are supposed to do in this study?) (By the way, every year someone says that they will use MS Word for data analysis. But seriously, MS Word is not a data analysis tool, and if there are proper tools available, you should use them. I've never seen a methodology textbook that recommended Word for analysis.)

You probably can use some specific qualitative tool instead of just transcribing the raw data. You mention why you choose not to use atlas, test the other one mention, dedoose, then you have at least tried it. It might even help you. But that is up to you to try. Qualitative data is something I try to avoid so I do not have any good help for you.

- Looking at the outputs that these software tools produce, to what extent will that output be able to provide answers to the research questions?

You will probably get enough data to answer your questions with the data transcribed into data format. No specific software will be used due to low number of participant as mention by the researcher.

Good luck!

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Re: Instructor support in distance courses contra on-campus courses

by Eduardo H Pérez Tobar - Wednesday, 31 December 2014, 18:40

Hi Stephanie!

I really want to apologize since I couldn't maintain my promise about the time framework for this feedback.

Now, regarding your entire work (up to now)

1. You are mentioning the main Aim of the research, but this has to be explicitly presented in a separate section (before objectives and after the background/problem discussion.
2. About Research Objectives: It might be too ambitious. On the one hand you are trying to compare e-learning courses with face-to-face education at DSV (advantages and disadvantages). On the other hand you are trying to compare instructor support in both types of education at DSV. And, finally (although you put this objective first) you are trying to test (verify or falsify) the hypothesis that instructor support in e-learning is better than instructor support in face-to-face education.

My suggestion is that you concentrate yourself in the comparison (advantages and disadvantages) of instructor support in e-learning and face-to-face education at DSV avoiding a more general comparison. Thus, your objectives may be two or three sub-goals to achieve this objective. In this way your objectives will be in line with your research question.

3. The research question is good. The second sub-question though is unclear: are you talking about "pedagogical approach" or about "educational technology"? You probably mean the former and not the latter. And remember that you will be talking about students' own experiences.
4. About limitations: the results will even be hard to generalize to DSV students and even to students of the same course. Different students may have radically different experiences about instructors support.

5. About data collection methods; observation of learning processes is a very complex issue, even in larger studies. To say that it would have been possible seems an ungrounded statement. The same is valid for the argument against questionnaires. For the type of knowledge you are looking for you don't need "deep knowledge" in the first stage. Questionnaires should guarantee the anonymity of the participants, so the argument "a questionnaire could be frightening and dishonest answers probably would appear, due to the uncertainty if the instructor would know of the answers" is not a valid one.Furthermore, you will not get "deep knowledge" of the subject interviewing such a small number of students, you will probably get deep knowledge of what the selected students think, but if they are not representative of the population you are investigating the results may be questionable.

6. But, these criticisms do not mean that you have to change your already selected data collection method, but only that you need to improve your argumentation.

7.Of your description of the data saturation one gets the idea that you have already conducted the interviews (since you said that data saturation was reached when 3 students were interviewed). But all the rest of the text gives the impression that the interviews have not yet been conducted. Look for a more consequent description.

In general, you should revise the tempus. In this part of the research you need to clarify how you have designed the research (method, data collection, plans, etc.). It means that you normally talk about how you are going to work (in the future and not in the past tense)

8.The questions that you are going to send to the interviewees should be improved (at least in terms of language), even though these questions are just a guide, and the interviewees may themselves come with own questions or ideas that may help you to improve the structure of the interviews and in this way facilitate the analysis of the results.

9.In general, you are conducting a simple and OK research for this level. Your are showing good knowledge of the subject, which is important, even though certain choices may be questionable. Good work.

Best regards and a happy new year!!

Eduardo

Assignment 07. Reporting the Results

One of the central tenets of science is reproducibility: Other researchers must be able to do the same study in the same way you did it. Hence, it is extremely important that research reports include an accurate and detailed description of how data collection actually happened ([U7] in Final report grading). The better an outsider can reproduce your study by following your description of how data collection happened, the more convincing and more reproducible your study is! Hence, the first step to do this week is to analyze your data, and report how your data collection and analysis actually happened. Some people prefer to place that description in the methodology section, while others prefer to start the results section with it in order to keep the "methodology" section theoretical.

This week also requires reporting the results. For reporting results, it's a good idea to try to find a good journal article that studied the same thing you study in a similar way you study it, and see how they reported their results. Each type of research study has a unique way of reporting results. While the keywords in quantitative research are things like frequencies, proportions, distributions, and associations, the keywords in qualitative research are things like rich descriptions, categories, and conceptual charts.

Qualitative studies often alternate between codes/categories, verbatim quotes, their relationships, and their interpretation (results and analysis are often intertwined). Quantitative studies often present descriptive statistics first, and then inferential statistics. Those are usually followed by an interpretation of both in Discussion chapter (Ch. 4): That is the topic for next week.

This week you can also draft the ethics section of the report.

Readings:

1. Chapter 6 in Randolph (2008) (Reporting educational technology research) (11pp.)
2. Chapter 15 in Denscombe (2010) (Writing up the Research, read selectively) (14pp.).
3. Pages 259-267 in Denscombe (2010) (Presenting quantitative data) (9pp.)
4. Pages 294-297 in Denscombe (2010) (Presenting qualitative data) (4pp.)

Video Material:

1. Research ethics: Publishing your results
2. Research ethics: Writing the ethics section
3. Reporting data collection
4. Using figures and tables
5. Suggestions for how to report qualitative results

1. Finish Data Collection for Your Study

Finish the data collection part of your study. For questionnaires, close the questionnaire system when a sufficient number of responses has been received. For interviews and qualitative observation, do initial exploration and coding of data, and when data has been saturated, make the call to end the data collection. For computer-based empirical work, pre-analyze the planned test runs and decide whether more needs to be done or whether conclusions can be drawn.

2. Delete "Data Analysis Plan"

At this point, delete your data analysis plan. There are no "plans" in a finished report, and none should be left in the final report. You can use the contents of data analysis plan in your reporting of how analysis was done, but it needs to be a description written in past tense. See this week's material for further information.

In the 8th week, you will be asked to turn your data analysis plan into a description of how analysis was done. You can do it now if you want.

The final report does not contain any "plans." Almost everything in the final report (in any research report) makes statements about a study that is finished. The previous weeks' data analysis plan should now be turned into a description of how data was, in fact, analyzed. That will become a part of 3.1 in the final report.

Task 7A. Report Your Results and Analysis

At this point, you should have enough data and you should have selected the right tools for analysis. First, describe exactly how the data collection actually happened (Section 3.1 in the final report template, but in some research reports under "Methods" section). Include, for instance, when exactly (days) was the data collected; where was it collected (physical place, Internet forums, Facebook groups, computer / system specs, etc.); how exactly was it collected (actual procedures, practical arrangements, equipment, etc.); how many data points were there or how many people were approached and how many agreed to participate (in some cases you can calculate response rate); what the system setup was in a computer-based study; how the interview / observation was set up. And so on and so forth. Try to aim to such level of description that anyone could do the same study in exactly the same way.

Second, proceed to do the data analysis that you described last week, and describe data analysis at the same precision that you did with data collection (above). Remember to include each step in your description! If you did qualitative analysis, **include screen shot(s) of your data analysis tool**.

Third, report the results or findings (Section 3.2 in the final report template). Denscombe's book pages 259-267 discuss how to present quantitative data, and pages 294-297 discuss how to present qualitative data. Good hints for how to use informants' quotes in qualitative research can be found in Joanne Marshall's (2005) text *Using quotes from qualitative data*. Good hints for reporting quantitative results using charts and graphs (do:s and don'ts) can be found on Vanderbilt University's guidelines.

In **qualitative reports**, we want to see *quotes*, *pictures,* or other elements that give a *feeling* about the data. Those elements clarify how the thing you studied feels like, sounds like, looks like, and so forth. With interviews, select some *verbatim quotes* that describe or highlight some trends or findings well. With observations, try to have a photo or a screenshot that highlights one of your findings. (You can decide whether *tables of codes or categories,* or *illustrations of findings* should belong here or to the discussion section.)

In **quantitative reports**, we want to see *tables*, *charts*, *graphs*, or other elements that visualize numbers in an easy to understand way. With quantitative results, select some of the important results and visualize them with a proper chart. Remember to follow the guidelines for how to report numbers.

However, use clarifying elements (figures, tables, etc.) sparingly! The worst you can do is have a lot of pie charts, graphs, tables, or other elements just inserted in the text, without any introducing, explaining, or analyzing text sections in between. For both qualitative and quantitative research the rule-of-thumb is that quotes, graphs, figures, tables, etc. should not be just "dumped" in the text, but each of those elements have to be *introduced* and *concluded*. The reader must know the significance of each quote, graph, or other descriptive element, and their relationship to the research aims and questions must be crystal clear.

And another important note: Don't try to make your study look like something it was not. If you did a qualitative study, reporting percentages (40% of people said *x*) is misleading. If you did a purely quantitative study, making guesses about why 42% of people said *x* is misleading.

Do the following items:

1. Combine all your work from the previous weeks to this week's task. Put the work from previous weeks under the correct labels in final report template (most research studies fit the template well; some design research studies might not.)
2. Edit your previous texts according to the feedback you got from other course participants and your facilitator.
3. Follow the data analysis steps that you detailed last week. Include a few screenshots of the tool at the end of the study so that we can see how you used the tool. (A few screenshots is not a bad idea for qualitative theses, either!)
4. Report data collection, data analysis, and the results. (Do not yet go to Discussion section: That is a topic for next week.)
5. Paste everything in the IEEE conference paper template and submit your whole text as an **MS Word file attachment** to your forum post (because the texts are pretty long at this point!).

Learning objectives: 1) To learn how to execute data analysis rigorously. 2) To learn how to report data collection and analysis properly. 3) To learn how to report data rigorously. 4) To get first hand experience of a data analysis software.
Estimated time to finish: 10 hours

Task 7B. Review Two Reports of Results

After you have submitted your own work to "Forum 7. Report your results and analysis", evaluate two other participants' work in that same forum. ***There is no checklist this time***, but do a *free-form evaluation* that focuses on *what is good* about the work, and *what could be improved*. You may describe how their text differed from what you would have expected to see based on their sections 1 and 2. Submit the two reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.
Be sure you are accurate in completing your reviews. And also importantly: **Please be nice in your reviews!** When you have done the two reviews, use the online submission tool below to submit hyperlinks to your two reviews, so that we can evaluate your submissions.

Learning objectives: 1) To be able to critically evaluate research reports. 2) To be able to suggest improvements to research reports. 3) To think about research reporting on a higher level of abstraction.
Estimated time to finish: 4 hours

Sample Post and Review:

Social media and small businesses
by Eleni Manthou - Thursday, 18 December 2014, 12:43

Hi !
Here is my final report template without the discussion part !

Final Report - Eleni Manthou.docx

Re: Social media and small businesses
by Lennart Peck - Friday, 19 December 2014, 09:05

Hi Eleni,

Interesting to read your research on social media and small businesses, both how you went about and the results that you are now presenting!

I think you have quite a clear description of the data and collection and analysis which follows what you set out to do. Nice the way you inserted the Atlas IT-section showing how you have proceeded. It is quite straightforward and I think the method serves your purpose well.

Some comments and suggestions that can hopefully be of some use for you improving your work further:

- Comparing your research questions and what you present under Results it doesn't quite match. OK, the two clearly relate but I would suggest that you go back to your questions, really check that that this is what you are answering to and maybe even structure the results part according to the questions.
- Being short and concise is good but I think the results part is now a bit too short (maybe the time constraints that we have all had J). Considering the large number of questions you posed and having interviewed three groups, I would believe that you have material to expand.
- It seems to me that you actually start your "Discussion" and presentation of certain results already under Data Analysis (for example what owners believe). Possibly, you can move some of these things down in the paper.
- Your discussion is at a relatively "high/abstract" level which is fine; after all this is the presentation of the analysis. But maybe you could insert a quote or two to make the description more "real" to the reader.
- Part of the methods chapter is still in future tense ("I will..." rather than "I have done..."
- Finally, this is of course not an English course but before handing in I would propose you do a language check as there are some grammar/spelling things there.

All the best - Merry Christmas!

/Lennart

Re: Social media and small businesses
by Ahmed Dawood Salman - Friday, 19 December 2014, 10:24

Hi Eleni
There is no doubt that the use of social media is essential for small businesses, where is the tool most important in the marketing of small businesses, and building relationships for small businesses in the business world
Content
Social media and small businesses a very important issue for small businesses that are trying to spread without extra costs but your study only focus on a small city named Larisa
Methodology
The use of the methodology is appropriate for some of those questions or problems but is study

provided wonderful, powerful and scientifically acceptable results
Reliability and Validity
The study achieved the conditions reliability and validity
Findings
The results are not consistent, and what is the purpose of this study and its results, if only focus on a small city named Larisa
In general
Have you been clearly stated objectives of the research? YES
Is the sample size appropriate and justified? YES
Have you been clearly described the research method? YES
Are the data description well? YES
Have you been to explain the analysis method clearly? YES
What do you mean the basic results of the research? Is it useful and valuable? NO
What is the impact from the results of the study on science and work? There is no significant impact

Good luck

Re: Social media and small businesses
by Sayli Gokhale - Sunday, 21 December 2014, 00:57

Hi Eleni!
It was interesting to read your paper and one can clearly see the efforts you have put into it. I have two suggestions to make the paper look little better.
1. Try to present the results in a diagramatic or graphical form. In my opinion, it gives a better idea of the results. You can simply use the charts that are available in MS Word.
2. Do read your work and check spelling and grammar before you post it in the forum. You can use 'Spelling & grammar' in MS Word. It will suggest correct spelling and grammar wherever necessary.
Merry Christmas and happy new year!
Sayli

Re: Social media and small businesses
by Eleni Manthou - Sunday, 21 December 2014, 02:00

Hi guys ! Thank you for your comments!
I really don't understand what is wrong with the spelling though. I did the grammar check right now and there are 2 letters with actual problem according to it! I guess there are some others too, but since I'm not native english speaker I guess it's normal !
Since you are two that mention it though I'm a bit worried because I always check for red

"correction" lines before I send it (of course, who doesn't).

Regards and Merry christmas,
eleni

Re: Social media and small businesses
by Iskra Popova - Monday, 22 December 2014, 13:16

Hi Eleni,
I can see you have written the abstract although it is required only for the final report. Nevertheless your text needs improvement. The abstract is supposed to describe the whole study (problem, aim, methodology and results). This is not the case with your text.
I tried to check whether your colleagues correctly noticed that the text has spelling and grammar errors. Please check the file enclosed. Note that this check does not include the tenses of the verbs.
I agree with many suggestions from the reviewers. You have kept grounded theory as data analysis method besides my suggestions not to use it since it is inconvenient for this small study. I suggest you revise the section about the results and use more citations from the statements collected from the respondents.

Re: Social media and small businesses
by Kiran Dulal - Sunday, 18 January 2015, 12:41

Hi Elini,
Here is my feedback about your work.
I like your topic about social media and small business. Nowadays social media is playing great role in everyone's life and of course in business as well. Some pros and cons about your research work are as follows.
You have shown screenshots from atlas.ti about how codes and categories were created on result which is really great but as I guess you are trying to show analysis process. I think you should show that on analysis section rather on result section.
Similarly rather than discussing each category, I think you should discuss the result according to research questions. I mean many categories will lie on one research questions and so on. I had similar mistake and I changed it after I get comments from my facilitator.
I agree with others student's comments about grammatical errors. I guess you will figure it out on the final version.
Other than that everything looks great. I really like how you have analysed your data.
Good Luck!

Assignment 08. Writing the Discussion section

Once the results are laid out, the next step is to tell the readers what those results mean in the broader scheme of things, and why the readers should care about those results. The results section presented your findings, as well as the first layer(s) of analysis above the raw data. The following section, often called "discussion", is the last section of an IMRAD paper (like the papers in this course) and the discussion chapter is often the second to last chapter in a M.Sc. thesis. The discussion section presents the highest level of analysis of a research study.
There are a number of things that a discussion section should do. It should give explicit **answers** to the research questions ([U4, U9]). It should discuss whether the results are in line with earlier research studies or if they contradict or conflict with previous research (**relevance to literature**). It should explain what these results imply to the theories presented in the background section (confirm, expand, question, etc.) (**theoretical contribution** [U9, U13]). It should explain what these results mean in practice (**practical implications, social and ethical consequences** [U9, U13]). It should describe how reliable the results are and what are their weak spots (**biases and limitations** [U9]). And it should tell the reader what is important enough for **future research** [U9].

Readings:

- Pages 267-270 from Denscombe (2010) (Evaluating quantitative research)
- Pages 297-306 from Denscombe (2010) (Evaluating qualitative research)
- Pages 47-49 from Randolph (2008) (Threats to validity)

Video Material:

1. Evaluating qualitative research
2. Evaluating quantitative research
3. How to write the discussion / conclusions chapter (Here, Dr. Matti talks about "*conclusions*" - that belongs to longer research reports, while your short report should only have "*discussion*", in which case you can apply some ideas from here).

Task 8A. Present Your Discussion Section

The discussion section is the part of a report where readers get the *meaning and significance* of your results. In the grading criteria, there are a number of criteria for the discussion chapter: see especially U8, U9, and U13.

Typically the elements that are presented in discussion chapter are:

- What are the main findings (from "results")?

It's a good idea to start the chapter with a strong sentence that captures the most important message from your results, such as "*The results showed no significant difference between learning outcomes and use of e-learning*", or "*The results showed that users had strong preferences concerning the dashboard element placement*".

It is often a good idea to explicitly answer the research questions. As to *how explicitly*, many studies include sentences like "*Regarding the first research question ("What do MD:s consider to be the central challenges of electronic voting?"), this study identified five central challenges*." Sentences like that make it clear that the readers don't miss the answers.

Remember: Don't try to make your study look like something it was not! If your study was quantitative, don't try to guess why 45% of respondents liked pizza, and if your study was qualitative, don't tell the readers that 20% of your 5 interviewees liked pizza because she was a oregano aficionado. If you went qualitative, keep it qualitative, and if you went quantitative, stick to numbers and nominal categories.

- How are these findings related to previous research on the topic?

This is where the theoretical framework comes to play. If you've done a very good literature review and analyzed, compared, and synthesized theories and concepts, it's easy to do this part. Your results may corroborate (agree with) previous studies. Or your results may raise up new aspects with a topic ("In addition to the findings of earlier studies, this study found *X*."). Your study may contradict some previous findings ("Different from a number of earlier studies, this study found that *Y*"). Your study may show the applicability of earlier findings in a new context.

These paragraphs may start with telling exactly what the relationship is between your study and previous research: "*The results confirm the results of Smith & Doe (2009), whose study showed no significant difference between e-learning group and classroom-based group*", or "*The results are well aligned with Theory X (Doe, 2010), which predicts that acceptance of technology is related to x, y, and z.*"

- Why are these findings important? ("*So what?*")

Your findings may bring up new issues, they may confirm or contradict previous results, they may show completely new results, they may demonstrate the applicability of theories or models in a new situation, they may give important information to decision-making, etc. Tell the reader what's the importance of your findings. The two key words are *theoretical contribution* and *practical implications*. An academic study should have at least some theoretical contribution. In addition, research studies often have some implications to practice.

It is very important to note that the grading criteria *require* discussion of social and ethical consequences of the research findings. This may well be the hardest part for many research studies, because often such consequences are non-obvious and indirect.

- What are the limitations of these results?

A critical eye on one's own results is one of the most difficult but most important things in a research study. The better a research study presents its own limitations and discusses their implications, the

more credible it is. What are the limitations set by sampling? By response bias? By other types of bias? By your selection of focus? It's a very good idea to link this to description of focus/feasibility at the beginning of the report. See the videos this week about this topic.

- Future research

Along with limitations, it's always good to discuss alternative explanations to the findings. Perhaps the findings were caused by something that should be taken into account next time? Perhaps this study revealed some new, interesting questions? Perhaps next time a different sampling, different method, or different theoretical framework could be useful? Future research is a very important part of a M.Sc. thesis, too.

- Conclusions

Whether as an explicit subsection or as an implicit "last paragraph", the discussion should include some sort of concluding part. The research report should always end with one paragraph that the reader should remember from this particular study - perhaps with the practical implications of this study: "This is what was found. This is why it's important. This is what it implies to theory / practice / decision-making / etc."

This week, do the following items:

1. **Combine all your work from the previous weeks to this week's task.** Put the work from previous weeks under the correct labels in final report template (most research studies fit the template well; some design research studies might not.)
2. **Edit your previous texts** according to the feedback you got from other course participants and your instructor.
3. **Write your discussion chapter** by following the discussion part guidelines described above, and submit your discussion section to this forum.
4. **Turn your data analysis plan into a description of how analysis was done**. The final report does not contain any "plans." Almost everything in the final report (in any research report) makes statements about a study that is finished. So, the previous weeks' data analysis plan should now be turned into a description of how data was, in fact, analyzed. That will become a part of 3.1 in the final report. Now it's a good time to do it, as the whole procedure is fresh in mind. You should use no more than a couple of well written paragraphs for this purpose. The better a reader could replicate your data analysis based on this description, the better the description is.
5. **Submit your whole text** as an **MS Word file attachment** to your forum post (because the texts are pretty long at this point!)

Learning objectives: 1) To learn how to write all parts of a discussion section.
Estimated time to finish: 15 hours

Task 8B. Review Three Discussion Sections

After you have submitted your own work to "Forum 8. Present Your Discussion Section", evaluate **three** other participants' work in that same forum. There is no checklist, but do a *free-form evaluation* that focuses on *what is good* about the work, and *what could be improved*. You may describe how their text differed from what you would have expected to see based on their sections 1 through 3. Submit the reviews of other course participants' assignments by replying to them in the forum. Try to review submissions that yet do not have any other reviews so that everyone gets at least one review, preferably two.

This week's reviews are particularly important, the grading is stricter. Points are given for *tangible suggestions for improvement, new angles, suggestions for how to re-write the parts better, and well justified critique.*

Be sure you are accurate in completing your reviews. And also importantly: **Please be nice in your reviews!**

When you have done the reviews, use the online submission tool below to submit hyperlinks to your three reviews, so that we can evaluate your submissions.

Learning objectives: 1) To be able to critically evaluate research reports. 2) To be able to suggest improvements to research reports. 3) To think about research reporting on a higher level of abstraction.
Estimated time to finish: 3 hours

Assignment 09. Reporting Research Outcomes

There are only a few things left in the course--most importantly selecting a proper title and writing the abstract. The title is, in effect, a less than ten word summary of the report, and usually the only thing people read about your work (a descriptive title is worth 1 point in the grading). The abstract is a 150-250 word summary of the report, and often the only thing people read about your work if they continue after the title.

At the end of the work, make sure that all parts are perfectly aligned: every part of the work should fit every other part seamlessly. For instance, if qualitative terminology is used in one part, it is usually a bad idea to use quantitative terminology in another part. And in the end, make sure that research questions are clearly and explicitly answered (it's amazing to see how many research papers do not answer their questions).

Readings (Re-Read)

- Chapter 6 in Randolph (2008) (Reporting educational technology research) (11pp.)
- Pages 259-267 in Denscombe (2010) (Presenting quantitative data) (9pp.)
- Pages 294-297 in Denscombe (2010) (Presenting qualitative data) (4pp.)
- Chapter 15 in Denscombe (2010) (Writing up the research) (14pp.)

Video material

1. How to write an abstract
2. How to write the discussion / conclusions chapter Vids: 640 (I talk here about "conclusions" - that belongs to longer research reports, while your short report should only have "discussion", in which case you can apply some ideas from here).

Task 9A. Reporting Research Outcomes

1. Edit Your "Plans" to Descriptions

During the course many parts of the work were written as "plans": Plan for data collection, plan for analysis, and so forth. At this stage they need a rewrite.

1. Take each "plan" and re-write it into a description in theoretical terms.
2. Most importantly, take your data collection plan and rewrite it into a section that justifies your selected data collection method (Describe what your aims are and why this selected method is superior to other methods.) Use a lot of methodology literature as references!

3. Also importantly, completely re-write your data analysis plan. Your readers don't need to know what you planned: They need to know how you have justified the analysis that you did. They need to read that the *methodology literature* says that the data should be analyzed using the method that you chose.
4. Search for the word "will" (future tense) and replace them with "was" (past tense). Usually the only place where you can have future tense in a research report is in "Future research". **Use your text editor's Search function to find all occurrences of "will".**

2. Add Abstract and Future Research

Abstract

Follow the instructions on the video and write your abstract. It shouldn't be more than one or two paragraphs long (150-250 words). After the title, the abstract is the second most important part of your text, because that's what most people read!

- **Video material:How to write an abstract (Video Link)**

The abstract of the thesis describes the problem, the research question, the choice and application of the research methods, the result, and conclusions and that it can be read and understood separately from the thesis.

The abstract may not contain references to sections of the thesis, references, or not well-known abbreviations. The abstract shall be concise but detailed enough that a reader, after reading the abstract, can determine if the thesis is of interest. The abstract shall follow the *Template for Abstract*, given below. However, a student may even include a complementary abstract structured in another way if desired.

Template for Abstract

PROBLEM:What is the problem that motivates the thesis? Why is it important that the thesis is written? RESEARCH QUESTION: What is the research question that the thesis intends to answer? Alternately, what are the goals to be achieved? METHOD: How does the thesis use empirical and/or design research? Which research strategies and methods are used? RESULT:What are the results of the thesis? CONCLUSION: What is the answer to the research question? Alternately, to what degree have the goals been achieved? CONSEQUENCES: What are the practical, theoretical, ethical and societal consequences of the thesis? (Many theses do not have consequences for all of these aspects.) ORIGINALITY AND SIGNIFICANCE: What is new and useful in the thesis? Who can make use of the thesis and in what way?

N.B. Remember to remove the PHRASES IN RED after writing the Abstract.

Future Research

Very often answers to research questions lead to more questions. Perhaps this study's limitations restricted the value of the answers and lifting those limitations might lead to a more insightful study. Perhaps the focus on a very specific group raised interesting findings that could be studied with a larger sample. Perhaps the outcome was a software piece that now needs to be evaluated.

When writing your "future research" section, think about what kinds of important and interesting questions did your study open. The future research section does not need to be long, just a paragraph or two, but it needs to *follow logically* from your results!

In the every thesis, Future Research is a very important section that is worth several points in the grading.

Task 9B. Review Two submissions

After you have submitted your work on Forum 9. Reporting Research Outcomes, review two submissions.

Final Report

1. Re-write Your Work

After 9 weeks of writing, the research report is usually a mixture of different kinds of language, cut-pasted parts from everywhere, and in many ways a spaghetti bowl of different threads. When putting your research report into a neat package, think about the following things:

- Is the terminology use coherent? (If it was a qualitative study, do all the sections speak in qualitative terms?)
- Are there language problems left? (Switch on your automatic spell and grammar checker, and check all the underlined parts. In the name of all things holy, please do this!)
- Are verb tenses used properly? (You are reporting a finished research study, so we don't want to see "The data will be collected using...")
- Are in-text citations used properly? (Choose a style guide and follow it religiously)
- Is the bibliography formatted properly? (This is the #1 reason for us boomeranging students' reports back to them. Choose a style guide and stick to it.)
- Are the research questions answered? (You can't imagine how many research studies don't actually answer their questions)
- Does the title describe the study well? (Use your creativity there. It's really hard to summarize a study in ten or less words...)
- Is the data visualization sensible? (Graphs, charts, and tables highlight some findings: They are not your standard tool for reporting. Try to have less than five of such elements in the report. You can't fit more than five in the usual 6-8 page conference paper anyway, so you have to choose carefully...)
- Are numbers reported and formatted properly? (See IEEE guidelines)

2. Submit the final report

For the final report, combine all your previous work in a coherent, well structured package. You can pick, from the structure in the final report template, the parts that are applicable to your study. In some type of research, such as design research, reports may look different from the template. We tolerate different kinds of structures well if they serve a purpose, but following the template is your safest choice.

The recommended **maximum length is 4000 words**. We do grade longer submissions, too, but exceeding 6000 words *may* affect the grade negatively. Rich description in some qualitative studies does require longer reports, so the restriction is not followed to the letter. However, reports must be

concise and to-the-point: rambling writing style, unnecessary passages, redundancy, and unimportant details reduce the grade especially if the report is over 6000 words long.

Note about **tenses**: You're reporting a study that has been done and finished. When you refer to data collection and analysis, use past tense (they're done) ("*Fifty-eight people submitted the questionnaire.*"). When you talk about analysis, past tense works well, although it is sometimes mixed with present ("*Eighty-two percent of respondents argued that...*", "*A statistically significant association was found between exam performance and assignment activity*"). You may only use future tense in "future research".

Save your work as an MS Word Document (*.doc/*.docx) file and submit your work. The file must be less than 10MB in size.

We check all submissions using plagiarism detection tools.

Only submissions made through this page are graded. **Email submissions are not graded.** Make sure that you adhere to the deadlines. If you have a problem with your Internet connection, a headache, or a skiing trip, there is a +24 hrs extension.

Common problems in course research reports

From the several final reports submitted in this course over the years, these are the most common things that have lead to a lower grade in the final report.

- There's no abstract or it is not in the standard abstract format
- Problem is not founded on scientific literature or does not refer to research studies
- Aims and objectives aren't explicitly mentioned
- Research questions aren't explicitly mentioned (in some special kind of studies they may not exist)
- Focus is not described at all
- Work is not empirical research but analytical research or literature review and synthesis
- Data collection methods are not described
- Method choice is not justified (why this method), only presented
- Sampling (or description of how data sources were selected) is not described
- Data analysis methods are not described
- Ethics is not addressed (or "not applicable" is not justified)
- There is no description of data collection
- Results are not reported
- Discussion / analysis does not exist
- Future research is not described and justified

- There are less than 3 *directly relevant* academic references on the topic (not including methodology references)
- There are less than 2 *methodology references*
- List of references is not consistently formatted (very common!)
- Citations are not consistently formatted in text
- Language has obvious spelling errors that automatic spell-checking would have caught
- Verbatim quotes, citations, and paraphrasing styles are not used properly
- Consent form is not attached (if relevant)
- Questionnaire sheet, interview protocol, etc. is not attached (if relevant)

Deadline for Final Report

The deadline for submitting the final report is **23:55 Tuesday August 14, 2018**, because that's when the course officially ends. There is, however, an extension (**+24 hrs**) is available for those who can't submit on time (**23:55 Wednesday August 15, 2018**).

Remember that you can re-write or change any or all parts of your report! What matters is how well the *final* pieces fit together in the *research report*. All research studies change during their lifetime. Also, note that there has been more facilitator feedback for some tasks, and less for others, but all that is just an extra: This is your project, and it will be graded by what you did, not by what facilitation you received (there are numerous students every year who do this course without any facilitation at all.)

Final Report Template

The final report should follow the IEEE Conference paper format **(click to download).**
For LaTex and other templates, **visit this link.**

The skeleton of the final report is given below:

Title of Research Study

Abstract

A research paper starts with an abstract. See [U1] in grading criteria. This should be between 150 and 250 words. Remember that abstracts usually don't include citations.

1. Introduction

1.1 Background
This section presents the study background and research problem. After reading this section readers should have a broad understanding of the problem: what the problem is, why is it a problem, how does the problem appear to people, and so forth. Background must be backed up by references to research literature. After reading this section, people should have the feeling "Wow, now this really is a problem! I wonder how the researcher is going to solve this...!"
See criteria [U2] and [U3] in grading criteria.
1.2 Research objectives
This section outlines how this research study will approach the problem. The section presents the aims of this study, as well as concrete research objectives that the study will aim to achieve. [U4]
1.3 Research Questions
This section lists the research main question and possible sub-questions (in this mini-project there might not be subquestions.) Those questions should be tightly linked with the problem, aims, and objectives. [U4]
1.4 Limitations of the study
This section briefly outlines what the limitations of this study are: What is the focus of the study? Feasibility items (money, resources) are often not listed here, or are formulated as "focus" items.

2. Methodology

This chapter presents the method choice for data collection that you have selected for answering the research questions. This introductory section may briefly describe strengths and weaknesses

or some potential method choices. This section should justify why one method is selected over the others (look back at RQ). *As you compare different methods and their strengths + weaknesses, make sure that your method of choice is all the time clear for the reader!* ("Due to the aims and objectives of this study, there were X alternatives to this study: X, Y, and Z. However, a comparison between their strengths and weaknesses showed that ...")
See [U5-U6] in grading criteria.

2.1 Data Collection Methods
This section describes the basic principles of the selected data collection method. Why this method? What varieties are there for this data collection method, and why is the proposed variety most suitable for this study? What are the strengths and weaknesses of this specific method? This section should also have some references to literature on research methods.
This section should also describe the instruments for data collection (interview design, questionnaire design, observation protocol, or other descriptions of data collection instruments). [U5]

2.2 Participants / Sampling
This section describes how the informants / participants for the research study were selected, as well as the implications of the selection/sampling strategy. This section is a theoretical section that explains the *principles* of sampling / selection of participants (what sample, why that sample, implications of that sample), but not how data collection was practically speaking done (that's presented later). After reading this section, the reader should know where / whom the data came from and how the people / sources of data were selected. Also possible biases should be mentioned. [U5, U6]

2.3 Data Analysis
This section describes the methods for data analysis. This section presents the principles, methods, and tools for data analysis, not yet what your data analysis found. If you used software like Dedoose, SPSS, or Atlas.TI, they can be presented here. For instance Denscombe (2010) has a complete section that can be used as a reference. [U5]

2.4 Research Ethics
This section describes the potential ethical issues in this study. A full description, including (but not limited to) things like risks to participants, security of research data, and issues of anonymity. *Even when there are no ethical risks, you must have this section and justify why there really are no ethical risks!* [U6]

3. Results

This section describes the study findings: What was found using the research instruments described above?

3.1 Data Collection and Analysis
This section reports how the data was *actually* collected and analyzed. It's important to describe data collection to such detail that the study could, in principle, be replicated in precisely the same way. For qualitative studies, it's important to describe the context to detail so that the readers understand the research context and what kinds of things might have influenced the outcomes.

Regarding data analysis in qualitative studies, it is often a good idea to include an illustrative screenshot of the analysis tool.

3.2 Results

This section presents the processed data and the analyzed data. This is the main section of a research paper; the one which is aimed at convincing the reader. See [U6] and [U7] in grading criteria.

4. Discussion

This section is the most important one, as it presents the highest layer of analysis: answers to the research questions, the meaning of your results to the theories that you discussed earlier, the relationship of these results to other studies (do they confirm or conflict with earlier studies?). This is also the place for discussing future research. [U8, U9]

This section also usually discusses the limitations of the study, such as discussion of possible biases and methodological problems. [U9]

A well written discussions section typically closes with conclusions: The problem, aims, major findings, their implications, and what should we think about this study. [U13]

References

The list of references, in any given referencing style - but consistently within that style. [U12] For this mini-study, the final list of references - including methodology literature etc. - must contain at least 8 *academic references* (not counting web pages, newspaper sources, etc!) and preferably more than 12 relevant academic references (for full grade).

Appendix 1: Glossary of Terms and Abbreviations

Briefly introduce all the special (technical) terms that appear in your report but are not explained in the text. As a rule of thumb, introduce any term that does not belong to the technical vocabulary of every M.Sc. graduate. (That is, you don't need to describe "Internet" or "learning" but need to briefly describe "crawler" (a program that automatically visits web pages in a pre-specified order) or "multiplexing" (transmitting several data streams over a shared medium). Every abbreviation that appears in your report (MMORPG, UN, TCP/IP, DSV/SU) must be spelled out here -- even the obvious ones.

Appendix 2: Informed Consent Form

Attach your informed consent form to your submission. It will also be attached in the final report. Similar, the informed consent form should be attached to M.Sc. theses that deal with human participants.

Appendix 3: Data Collection Protocols Used

If you used a survey, attach the survey here. If you did structured or semi-structured interviews, attach the structure here.

Appendix 4..n: Other Appendices

If you have large spreadsheets, tables, data sets, or other things that need to be presented in support of your findings, but that are too large to be a part of the text itself, they can be included as extra appendices.