ACADEMIC SKILLS

Session II

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Research paper

Non-normative & objective

- Presentation of research outcomes and how they were collected
- Informs about the research and the proces leading to the result
- Presents the whole research process
 - the reader must be able to replicate the research with the same results reliability!
- Does NOT need to contain description of all research steps in a detail
 - Focuses on WHATs, WHYs & HOWs of the research
- Stressing what is important
- Coherent and easy to follow
- Published in academic journals

Research paper II

1) introduction

- description of the issue
- purpose statement
- literature review (can be added as a separate section in more extensive papers)
- theoretical foundations (or separately as a following chapter)
- objectives
- 2) methodology (i.e. nature of the text and methods)
- 3) results
- 4) interpretation/discussion

Keep the WHAT/WHY/HOW structure

Research paper III

Take a look at the content again

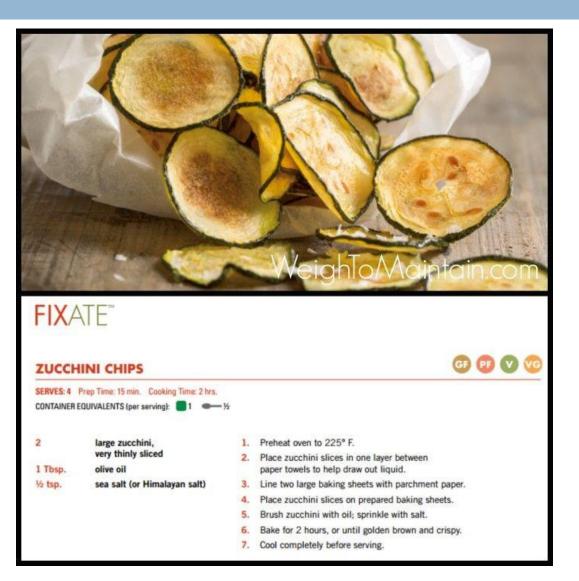
- What is missing?
- Why?
- Guide your readers through the research be transparent!
 BUT!
- Don't describe everything that happened during the process
- The reader has to know the tools, sources and the result, not the actual proces and trivia surrounding the subject matter

Research paper IV

- Replicability = reliability
- Applies to sources, methods, outcomes as well as referencing
- Although not every part of the research process is thoroughly described in the actual text, everything has to be reflected and clear guidance must be provided
- The reader should be able to find out:
 - Which sources were used?
 - Which actors were interviewed?
 - Are those interviews available? Where?
 - Are the weblinks still accessible? When were they accessed?

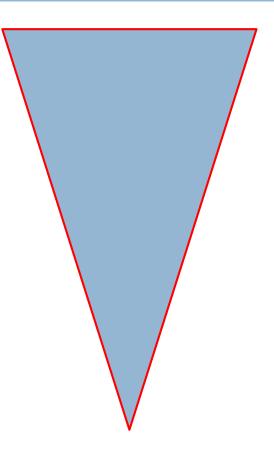
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Research paper V



Research paper VI

- □ Try to think of your own research topic
- In-class work of the Week 13
- Use the top-down process
 - should also work vice versa
- Start with a broad area
- Narrow down the topic
- Mind the 'doability' of the research
- □ Let's give it a try ☺



Poster

Non-normative&objective

- Used at conferences, conventions, exhibitions,...
- Presentation of actual research/research plan in brief and comprehensive manner
- Similar to fact sheet in the way information is presented (tables, graphs, pictures,...)
- Should be understandable in a multi-disciplinary (multinational) environment
- Follows the process of research paper in concentrated form (objective, purpose, methods, results, discussion/further work)
- Should be self-contained

Poster II

- □ Should be comprehensive
 - but also easy-to-digest and understand (even for people from outside the field)
 - visitors should not be forced to spend long time trying to figure out what is going on
- Should be attractive (but not overly glaring)
- Structure should be simple and understandable
- Be ready to explain your research when necessary
 - stressing main points and outcomes
 - if the visitor is interested, a detailed description may follow
- Should contain references to the employer/sponsor/university (acknowledgements) and contact to the author

Evolving Context of Smart Grid: Technology and Policy across States and Utilities

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University of Minnesota: Twin Cities¹

Defining Smart Grid

Background to States & Utilities

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Methodology

We analyzed 200 documents discussing "Smart Grid" from states and at filties access five states—Texas. Illinois, Minesaras, Nausachautts and Wernsol. We could the documents using a thematic qualitative policy analysis bailt on the Socia-Adritical Dealaution of Energy Deplayment (Spicio) (Instruction (Spichers et a), 2006).



Figure 1: Methodology schematic

We identified 200 documents from state and utility web pages searching for "Smart Grid" and "Smart Meene" and coded them by paragraph, analyting the environitors. For developing a "Smart Orid" the technologies used, and the social context. We solited results by stop, utility, and utility type coding documents by coverage: no mention, biolo-2001, meetium (1-500) and biologies (bio).



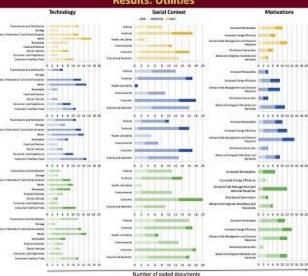
Rural Electric Figure 2: United States KTO map Co-operatives.

See.	Population (Million)	total Generation (TWN)	Per Capita CDD Drobolano (Medito Terel	Percent Bisconstry Intern Renervative (%)	Animage Electricity Price (E)mult)	Bechility Marter 1994
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MIN	5	0	Alle/Smart mater
MA	18	193	4MI, Distribution Automation
VF.	+	28	AM

Table 2: State "Smart Grid" Project Profile"

Results: Utilities



Genera 1: NyTy10 Results for Utilities

Table 3: State Utility Profile

Discussion and Conclusions

Policy Analysis

 The policy context for "Smart Grid" is shaping how "Smart Grid" technologies are being homed across and within different stakeholder

· Many crucial decisions affecting "Smart Grid" deployment are

determined by state-level policies and utility programs. How these

policies affect "Smart Grid" deployment across jurisdictions is not well

We summarized state-level legislation on distributed generation, net

metering, demand response, renewable energy integration and

renewable portfolio standards and analyzed documents created by State Energy Offices and Public Utility Commissions and utilities to explore

how these groups are framing the opportunities and challenges of

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None

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Coros, Vermont

Electric Ecoperative

All states and utilities focus on Transmission & Distribution and Meters

with Electric Vehicles and Storage mentioned less frequently.

All states and utilities framed "Smart Grid" in terms of economic and technical aspects, because on cost recovery, economic incentives and technical compatibility of "Smart Grid" components.

 VT and Till have more than 50% of advenced meter coverage, but while the decoverents do not mention it mene than other states, the nature of the convension is different and focused or practical inderventation and experience.

 States in the DRCOT (DX) and NISO (MN, IL) mention Renewables with a low frequency and Servors 8. Communication with a high frequency. NESO states (VT, NA) were opposite, even though they have lower initialize Renewable rapidity.

 Results of this analysis contribute to improved understanding of the scale and type of "Smort Grid" development and potential opportunities across utilities, states, and regions.

References

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Acknowledgments

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SWOT analysis

- Subjective & normative (if recommendations are included)
- □ Structured way of assessing particular issue
 - not an actual method, rather a way of structuring a broader analysis
- Presents Strengths, Weaknesses, Opportunities and Threats in comprehensive and understandable manner
- Uses precise and verifiable statements
- Prioritizes influencing factors
- Recommendations should be derived from clear outcomes

Strengths 1. Clarity in r 2. Good relationship with employees 2. Bureaucra

- 3. Number of stores are there in UK
- 4. Long term relationship with suppliers
- 5. Procedures are simplified to increase efficiency of operational processes

6. The updated technological development in the operation proves to be beneficial for the financial base of the organization

Weaknesses

1. Clarity in marketing strategies are lacking

2. Bureaucratic cultural organization

3. Customer service is poor

4. Technology is poor, M&S is unable to provide an accurate readings of its stock in each of its stores

5. Demands of every segment were not utilized instead it viewed market as a whole

6. everyday operations were given more importance in comparison to strategic planning

SWOT

Opportunities

1. Keeping in line with the competitors, M&S must enter ebusines in an effective way

2. Rapid changes in technology. M&S needs to keep ahead of its competitors

 Increase in power of M&S for developing customer and supplier base due to the availability of tools such as internet, e-commerce.

4. Increasing shopping requirement in order to bring changes in lifestyle of customers

5. International accessibility to supply channels

Threats

1. Competition becoming intense

2. Internet technology enables consumers to shop from home

3. Expansion in international markets less successful for M&S

 Variation of the trading rules, conditions, custom duties and taxation among countries

5. Domination of international markets due to global brands from long time

Your own SWOT analysis

- □ Choose an issue...
- □ Identify its strengths, weaknessesses, opportunity, threats

Thesis

- □ Similar to writing an article/research paper, only much worse ☺
- Keep that WHAT-WHY-HOW structure
- Complex description of the research process including purpose, motivation, literature review, methodology, the research process, all underlying information and data, conclusion, dicussion, ...

Research paper

- Thesis is the record of the WHOLE research process
 - Paper: info about the research
 - Thesis: research itself
- Research papers are usually derived from such records (i.e. theses)

Writing style

- Only a question of self-confidence...?
- Use The study shows..., It was proved that... instead of The outcomes might show that..., It is likely that the evidence might point to... where possible
- Avoid shortened forms (e.g. use are not instead of aren't)
- □ Try to be concise and NOT wordy
- Keep the text coherent (should make sense) and cohesive (should be interlinked)

Content & some mixed advices

□ A word of advice: what is it you want to tell the reader?

- Focus on the message, surround it with the context later
- Use (mind) maps, graphs, networks, etc. when necessary
- □ If not sure, always ask yourself:
 - Is this getting me closer to the conclusion?
 - What is this good for?
 - Is this making the thing easier to understand or not?
- Put the issue first
 - Methodology should serve the purpose, not the other way around

Probably the most important thing to remember...

- Research paper & thesis should not only present outcomes of the research but should also serve as description of the research process
- The aim is to provide a description enabling reader to replicate the research and come up with the same conclusions
- □ This enhances **reliability** of the research

Assignment

- Submit a poster presenting a research project
 - For this purpose students can use some of their earlier work (bachelor/master thesis)
- Research topic with description of a procedure and outcome (if available)
- Students can consult their project with the lecturer
- Must be uploaded into the Information System by 10th November 23:59

Thank you for attention

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