Example – Creating a Bag

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Research starts with a Problem

- You need something to carry home the goods from your weekly shopping on Saturday morning

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How to carry?







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Research needs a clear Goal

- Research needs a clear goal or articulation
- You need a bag …
  - for your complete saturday shopping in the city
  - with which you can carry soft and heavy things
  - which is easy to load
  - with which you can walk on paved streets and dirt tracks
  - which you can easily take with you on the bus
- You decide to build your own bag because there is no bag that satisfies all your requirements (design-oriented research)

Research needs a clear Goal or Articulation

- To build the bag the following characteristics should be considered
  - ♦ loading capacity
  - ♦ materials
  - ♦ carrying options

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Research is guided by a specific Research Question or Hypothesis

- How should a bag be constructed so that it will satisfy the requirements for Saturday city shopping?

The Problem is divided into manageable sub-Problems

- What is the ideal size?
- How should the bag be loaded?
- What is the ideal material to carry also heavy things?
- How can the bag be carried (with hand, over shoulder, on back, rolling …)?

Research is based on existing knowledge and accepts certain critical assumptions

- We know from theory
  - Properties of different materials are
  - Wheels are good for paved streets
  - Doors in a bus have specific size
  - …

Research follows a procedure / methodology

- Using theory you find that there is no bag that suits your requirements
- You construct your own bag
- Plan:
  - What does the design look like (data gathering)?
  - Where am I going to buy the material?
  - What tools do I need?
  - Where am I going to build it?

The result

- A bag with wheels, usable also as backpack:

Is this now research? Unfortunately not yet!

Research must have a Contribution to the Body of Knowledge

- New insights: Originality
- Uniqueness: Originality
- Generalisable: Significance
- Comparison: Validity
- Testing: Validity

AHA moment!

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Research and building a bag

	Designing a bag
Problem	Carrying shopping goods
Question	How should a bag for shopping in city be constructed
What do we know?	Theory on loading capacity, material, carrying, …
What do we want to do? How?	Plan!
What did we do?	Build the bag …
Is it working?	Testing
Why is it worth something?	Best suited for a specific category of shopping …

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Research Process and the Structure of your Thesis

	Creating a software artefact	Structure of a research paper
Problem	Cheating of students …	Introduction
Question	What are the similarity characteristics of assignments	
What do we know?	Existing approaches for text comparison and classification	Literature Review
What do we want to do? How?	Plan!	Research Methodology
What did we do?	Build the software …	<Body of work>
Is it working?	Testing	Evaluation
Why is it worth something?	General approach for text similarity	Conclusion

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Research Process and the Structure of your Thesis

	Designing a bag	Write a piece of software	Structure of a research paper
Problem	Carrying shopping goods	Cheating of students …	Introduction
Question	How should a bag for shopping in city be constructed	What are the similarity characteristics of assignments	
What do we know?	Theory on loading capacity, material, carrying, …	Existing approaches for text comparison and classification	Literature Review
What do we want to do? How?	Plan!	Plan!	Research Methodology
What did we do?	Build the bag …	Build the software …	<Body of work>
Is it working?	Testing	Testing	Evaluation
Why is it worth something?	Best suited for a specific category of shopping …	General approach for text similarity	Conclusion