What is not research?

- Playing with technology
- Book report
- Doing what others have already done
- Mere information gathering
- Facts discovery, facts transcription
- Looking for information
What is research?

* Finding answers for questions
* An organized and systematic search for answers using scientific methods
* Disciplined inquiry
Definitions

A systematic investigation to find answers to a problem (Burns, 1994)
A systematic, controlled empirical and critical investigation of propositions about the presumed relationships about various phenomena (Kerlinger, 1986)
Primarily committed to establishing systematic, reliable and valid knowledge about the social world (Bulmer, 1977)
A process for collecting, analysing and interpreting information to answer questions
* Originates with a question or a problem
* Requires an articulation of goal(s)
* Follows a specific plan of procedures
* Guided by specific research problem, question or hypotheses
* Accept certain critical assumptions
* Requires the collection and interpretation of data to resolve the problem
Characteristics of Research

- objective
- precise
- Valid & verifiable – correct and can be verified by us and others
- parsimonious
* Empirical – hard evidence from life experiences or observation
* logical
* Probabilistic
* Systematic – logical sequences
Characteristics of research

Research

* Should be about some problem that encourages enthusiasm (for you) and interest (for others)

* Is often generated from the thought “what we’ve got now/from the past isn’t quite right/good enough – we can do better…”
* Consists of work that leads to a meaningful contribution
* Generates, in some way, a better solution to the problem
Research Methods

* the ways one collects and analyzes data
* methods developed for acquiring trustworthy knowledge via reliable and valid procedures
Why research is important?

Research
- helps make informed decisions
- aids practitioners to evaluate the quality of their work
- is a way of sharing personal experience/intuition with others
- helps generate and verify theories
Why language research?

* Uniqueness of research settings
* No exact answers for one’s specific questions
* No two language learning/use situations are the same.
• Progress
• New advances in science necessitate further research.
• Research is needed for development.
Types of research

* Library research
  * Looking at what other people have said about a particular issue
* Secondary
* Conceptual
* Empirical research
* Data-based
* Systematically collecting and logically analyzing the data
Types of research

Deductive

- Theory
- Hypothesis
- Observation
- Confirmation

Inductive

- Observation
- Pattern
- Tentative Hypothesis
- Theory
Steps in conducting research

* Initial Idea
* Background Investigation
* Refinement of Idea
* Core Work
  * Investigation and Development
  * Documentation
* Prototype (if appropriate)
* Evaluation
* Identification of Future Work
* Presentation
Initial Idea

* Stems from critical thinking
* Should be an area you’re interested in, as:
  * You’ll be spending a lot of time with it
  * It won’t always be easy/fun to continue…
* Be on the lookout for and open to seeing problems
  * Gaps in framework
  * Manual solutions (that can be automated)
  * Inelegant solutions
* Ask questions
  * “Is something missing here?”
  * “Can this be done in a better way?”
  * “Is there a need for a new approach?”
Background Investigation

* Introduction to the topic
* Definition of the related variables
* Overview of the present research context
Presentation of what motivated this research

- Has this work been done previously?
- What similar work has been done leading up to this point?
- How is any previous work distinguished from what I’m planning to do?
- What group of people will be positively impacted by the research?
Refinement of Idea

Based on background investigation, you need to refine the idea

Issues:

- Precision – focus on precisely identifying:
  - Problem
  - Possible solutions

- Scope – need to “build fences”
  - What’s an essential part of this work? (fence in)
  - What’s tangential, additional, or for any other reason best left for later/someone else? (fence out)
Core Work, Investigation and Development

* Provide yourself with infrastructure
  * equipment / software
  * additional knowledge ("get up to speed")
* Do the work
  * Experimentation (scientific process)
  * Develop opinions
  * Look for better ways of solving problem
    * Can you generalize?
    * Can you develop a framework?
* Discuss, brainstorm
* Reevaluate as you proceed
  * Look for improvements, changes to your original ideas
Core Work, Investigation and Development (2)

Process

- Work regularly
  - Easier to keep going if you have a commitment to a regular work time
  - Helps you keep your past work in mind
- Allocate large block of time for research
  - Takes time to get going/back to speed
  - Make sure you can do something significant each work session
Core Work, Documentation

- Document as you go
  - Don’t lose any information
  - 1) Maintain a journal for day-to-day thoughts
  - Can be paper, electronic, ...
  - Keep it with you at all times
    - You’ll never know when good ideas will hit
2) Keep an updated task list
   Focus on accomplishing something each work session

3) Write up your work
   Periodically, write a few pages on a subset of your work
     Summarize work, accomplishments, problems
   Write up a summary document
     Can be based on steps discussed here
Demonstrate the merit of your ideas

* If work is non-theoretical, do this through a developed system
  * No need to build the entire system
  * Just need to demonstrate the value of the core ideas
Evaluation

- Perhaps the most difficult part
  - Best if you can show others are already using your work
- Quantitative
  - Test your prototype
  - What improvements exist over currently available alternative?
  - How much of an improvement do you see?
- Qualitative
  - What can you do now that couldn’t be done before?
  - What are the benefits of your solution?
Identification of Future Work

* Helps you organize any future efforts
* Helps others build on your work

* Sources:
  * What you excluded in your idea refinement
  * New problems that have surfaced during your work
Your research is not a contribution to the field if no one knows about it or can use it

Presentation/Dissemination

- Conferences, Journals, Web
- Papers, Talks, Poster Sessions
Qualities of a researcher

Discuss:

* Work in pairs. Based on the previous slides brainstorm the qualities of a good researcher.
Dörnyei (2007, p. 17):

- To achieve excellence in research one needs:
  - Genuine curiosity
  - Common sense
  - Good ideas
  - Discipline
  - Reliable
  - Social responsibility
Skills needed for research

* Desire for accuracy of observation & precision of statement
* An alert mind
* Must practice “The art of enduring intellectual hardships”
* Making statements cautiously