Synopsis

- Introduction to research design and analysis in Human Development. Meaning of science, scientific research and its application in Human Development. Research planning process, data analysis and interpretation, report writing and presentation of research findings.
Objectives

As a compulsory subject, it is expected that at the end of the course students will be able to:

1. Discuss the philosophy of research, and the concepts of Science and the scientific methods.
2. Describe the research design in human development.
3. Describe the steps in preparing and conducting a research project.
4. Analyze & interpret research data & prepare a research report.

Assessment:

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<tr>
<th>Item</th>
<th>Tasks</th>
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<th>Note</th>
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<tbody>
<tr>
<td>1. COURSEWORK</td>
<td></td>
<td>70</td>
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<tr>
<td>i. Test 1</td>
<td></td>
<td>25</td>
<td>Week 5</td>
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<td>ii. Assignment 1 (Article analysis)</td>
<td>10</td>
<td>Week 3</td>
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<td>iii. Assignment 2 (Propose a title)</td>
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<td>Week 8</td>
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<td>iv. Assignment 3 (Proposal)</td>
<td>15</td>
<td>Week 12</td>
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<td>v. Quiz (2)</td>
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<td>e-mail</td>
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<td>2. FINAL EXAM (comprehensive)</td>
<td>30</td>
<td>W1-W14</td>
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*** Test & exam will include both objective & subjective questions

References

**Week 1: Outline**

- Definition(s) of research
- Purpose of doing research
- Philosophy of research
  - Research & Scientific Knowledge

**Brainstorming**

- Q1: What do you know about research?
- Q2: Have you “done” any research?
- Differentiate “research” in our daily life vs. scientific research
- What is research for?

**What is research?**
What is RESEARCH?

- Re + search
- French word “cerchier”, which means to search or seek
- Re = again
- Doing the search again and again (many times)
- WHY do it many times (re-search)?

To ensure / to be certain...

- that something really occurs
- that something really happens
- that a phenomenon really exists

Through research / repetitive experiments:

- Discoveries of many things (radium, virus and antivirus, origin of culture, use of new things etc)
- Inventions of devices (fan, phones, computers)
- Designs of things / products (new and improved versions)
- Development of new things
## Definitions of research

###Definitions

<table>
<thead>
<tr>
<th>Scholars</th>
<th>Definition of research:</th>
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<tr>
<td>Kerlinger (1973)</td>
<td>An effort to analyze data using scientific method in a formal and systematic way. Its purpose is to find answers to questions or problems.</td>
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<td>Touliatos &amp; Compton (1988)</td>
<td>An effort in discovering new ideas, describing situations and events, as well as describing phenomena.</td>
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<td>Ahmad Mahdzan (1992)</td>
<td>Systematic method used by humans to increase knowledge.</td>
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<td>Barbie (2001)</td>
<td>An investigation using scientific method that is frequently used by human to describe / predict events or future happenings.</td>
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###Purpose of research: Why do we do research?

- **Scholars**
  - Kerlinger (1973) - An effort to analyze data using scientific method in a formal and systematic way. Its purpose is to find answers to questions or problems.
  - Touliatos & Compton (1988) - An effort in discovering new ideas, describing situations and events, as well as describing phenomena.
  - Ahmad Mahdzan (1992) - Systematic method used by humans to increase knowledge.
  - Barbie (2001) - An investigation using scientific method that is frequently used by human to describe / predict events or future happenings.
Basic reasons:

- People are curious, social beings
- To discover new information
- To expand existing knowledge
- To investigate specific questions / problems
- To validate past informations
- To investigate existing phenomenon
- To determine new uses of, and application for goods and services
- To provide answers for what / where / when / how & why questions
- To bring out information that might not be discovered in ordinary course of life
- To contribute to theory and generalizations
- To verify existing theories & facts
- To predict events
- To establish inter-relationships & derive explanations
- To help in developing new tools / concepts / technology / theories to study phenomenon

Basically, research is important in:

- Advancement of scientific knowledge
- Development of new technologies
- Improvement of quality of life

Social Science research is aiming at findings, interpretations and applications of information to improve quality of life & quality of environment.
Therefore, research are aiming at:

- 4 basic goals:
  1. Description
  2. Explanation
  3. Prediction
  4. Control

Descriptions:
- Involves systematic approach in observing behaviour
- Through systematic plan, accurate descriptions can be made
- i.e. in 1964, Kitty Genovese was attacked & murdered while walking home in New York. 38 people saw what was happening from their apartment, no one helped or even called the police. Then researchers started research by asking the people to describe what had happened & link it with helping behaviour
- Observe to describe…
- *** Note that as human beings, we always “describe” the world around us

Explanation
- When we understand the descriptions (of certain things, i.e. behaviour) we can explain it better.
- From the descriptions, explanations are made in a neat scientific package called “a theory” (a general organizing principal)
- i.e. when there are many witnesses we expect others to do the job, if we don’t it is OK since others should have done it
Prediction

- Hypothesis allows us to make prediction
- Testing hypothesis will allow assessment on the use of theory in explaining a given phenomenon / behaviour
- On helping behaviour — helping may occur when people try to avoid feeling guilty; helping diminished when this guilt is relieved
- As a complex prosocial behaviour many factors can predict helping behaviour

Control

- Once researchers are confident of the prediction, ultimately behaviour can be controlled
- Although it is not caused by just one single variable, control can be made to a certain degree by manipulating relevant variables
- i.e. do you give money to beggars? When? Why or why not
Philosophy of research

- Greek words:
  - Philos = love
  - Sophia = wisdom
- Nature of knowledge & belief
- In research, the concern is on the investigation on what distinguishes belief from knowledge

Basically,

- Research is a mean of discovering knowledge (God creates knowledge, human beings discover them)
- Research method is a tool in helping the discovery
- Knowledge is important for people's lives → to reach the goal of obtaining a high quality of life; and a high quality of environment

Scientific Knowledge

- Based on systematic scientific work; unlike casual observation
- Researchers abide by certain general principles in making decisions through-out the research process
- Relies on the facts that observation are objective, data driven, public & potentially replicable
### Scientific knowledge

<table>
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<th>Characteristics</th>
<th>Description</th>
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<tr>
<td>Science is objective</td>
<td>• Concepts are clearly defined</td>
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<tr>
<td></td>
<td>• There exists some limitations</td>
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<td></td>
<td>• Some concepts are very “subjective”; but to be objective researchers must</td>
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<td>clearly define what it meant and how it is measured</td>
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<td>• i.e attractive = sweet smile? Sexy lips? Colourful clothes?</td>
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<tr>
<td>Science is data driven</td>
<td>• Conclusion must follow logically from data (researchers do not &quot;make belief&quot;)</td>
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<td>• Based on data, scientific knowledge is better than intuition alone</td>
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### Scientific knowledge

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<td>Science is Replicable &amp; Verifiable</td>
<td>• Research must have the potential to be replicated to see if we get the same results each time</td>
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<td></td>
<td>• In Science, we do not keep secrets from each other</td>
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<td></td>
<td>• Sometimes results are the same sometimes there are not, but the approach must be scientific</td>
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<td>Science is public</td>
<td>• Research can only be valid and useful when they have been scrutinized and made public</td>
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<td>• Peer reviewed – articles are reviewed by the professional clan</td>
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<td>• Whenever the articles are published in journals – the research is made public</td>
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### Ways of knowing

- There are some things in life that we know to be TRUE.
- On a sunny day, the sky is blue.
- When a person is infected with flu virus, he will end up with flu.
- If celery has fewer calories than cheese and cheese has fewer calories than a piece of cake – than if people eat cake, you will gain more weight.
- If a child gets sick after eating something most likely he will not eat that again.
Source of knowledge (ways of knowing)

1. Intuitive knowledge or tenacity (the obvious)
2. Authoritative knowledge
3. Logical knowledge
4. Empirical knowledge

<table>
<thead>
<tr>
<th>Source of knowledge</th>
<th>Descriptions</th>
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| INTUITIVE           | • Belief, faith, intuition  
|                     | • Based on feelings ("what the heart says")  
|                     | • Not hard / cold or solid facts  
|                     | • i.e. Belief: when people choose partner, apposite attracts — widely believed that we chose people of the opposite; some things can be true in general but there is always exceptions  
| AUTHORITATIVE       | • Sources of information are people, books, people in "power" or experts  
|                     | • Validity / strength of the information highly depends on the validity / strength of the sources  
|                     | • i.e. Belief: exposure to virus, we get sick (or if you walk in the rain — you will get high fever)  
| LOGICAL / a priori method | • Reasoning is behind it  
|                      | • Clear and logical reasons behind knowledge  
|                      | • Human behaviour is very complex  
| Experience          | Experience can influence our decision making  
|                     | Single episode does not represent reality in general; people can be more confident but not necessarily more knowledgeable of the truth  
| EMPIRICAL (Scientific method) | • Based on demonstrable, objective facts (obtained through observation / experimentations)  


Relationship between research & knowledge

Research may use all sources
- Intuitive – by coming up with initial ideas for research; maybe experience too
- Authoritative – doing literature review (i.e. professional literature)
- Logical – when reasoning – from initial stage to conclusion
- Empirical – engage in systematic procedures

Brainstorming & wrap-up
- Is research important?
- If you were given a chance to run a research – what would you like to study?
- Name 4 “research related terms” you have learned today.