



# RESEARCH PROPOSAL




EDU 702

# CONDUCTING RESEARCH - STEPS

---

Step 1 - Identifying a significant research problem



Step 2 – Writing a research proposal



Step 3 – Conducting a pilot study



Step 4 – Conducting the main study



Step 5 – Preparing a report

# THE RESEARCH PROPOSAL

---

- ▶ **What is it?**

- ▶ A written plan to conduct a research study
- ▶ Communicates a researcher's intention
- ▶ Makes clear purpose
- ▶ Provides step-by-step plan

- ▶ **Basically**

- ▶ Describes the problem you wish to study and how you plan to study it

# MAJOR SECTIONS

---

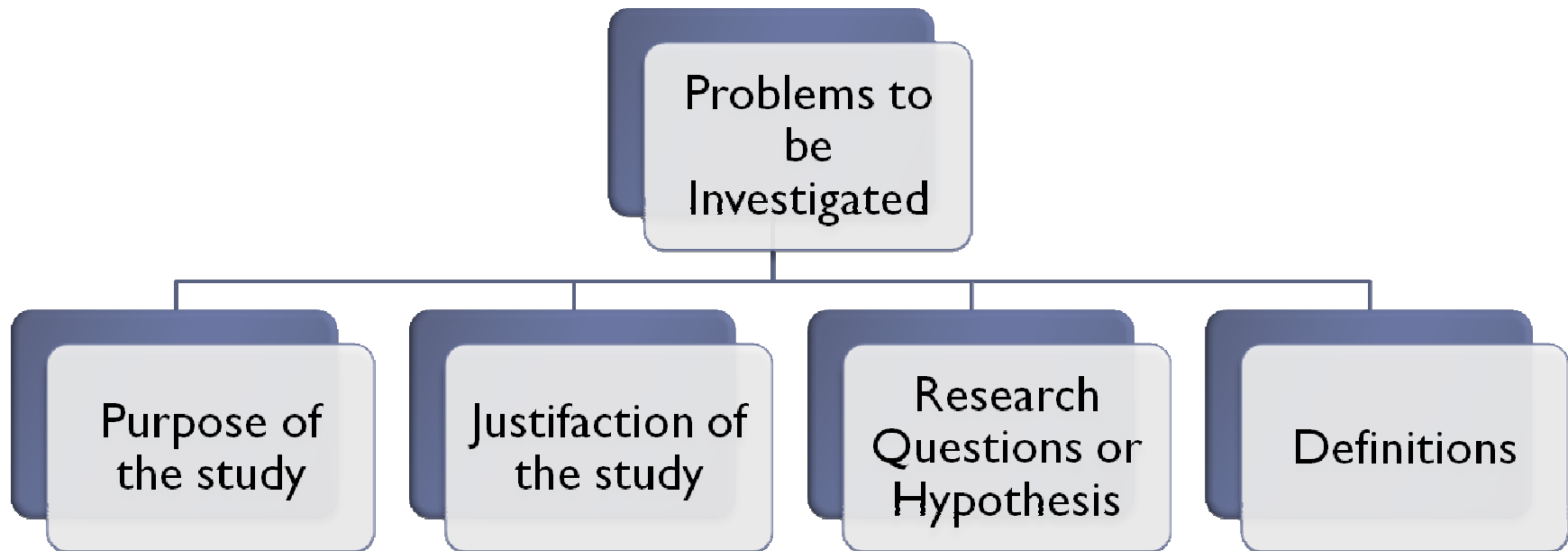
Problems  
to be  
Investigated

Background  
and Review  
of Related  
Literature

Procedures

# PROBLEMS TO BE INVESTIGATED

---



# Identifying a Research Problem – Some Advice

---

- ▶ Your imagination & insight – ultimate value of research
  - ▶ Substantial amount should be devoted
- ▶ Research on area that is directly related to your professional goals
- ▶ Research on an area where you can publish in refereed journals
  - ▶ Research on something that contributes to research knowledge not your personal knowledge (but which can be the starting point)
- ▶ Review literature
  - ▶ Read follow up/recommended further investigation

# Identifying a Research Problem – Some Advice

---

- ▶ **Ask these questions:**

- ▶ Has research on this problem been conducted previously?
- ▶ If so, what has been learned?
- ▶ What more can I contribute to what is already known?
- ▶ Are the methods that I intend to use worse than, as good as, or better than the methods used by the other researchers?
- ▶ Is my research problem significant, or are there more compelling research problems that should be addressed?

# Identifying a Research Problem – Some Strategies

---

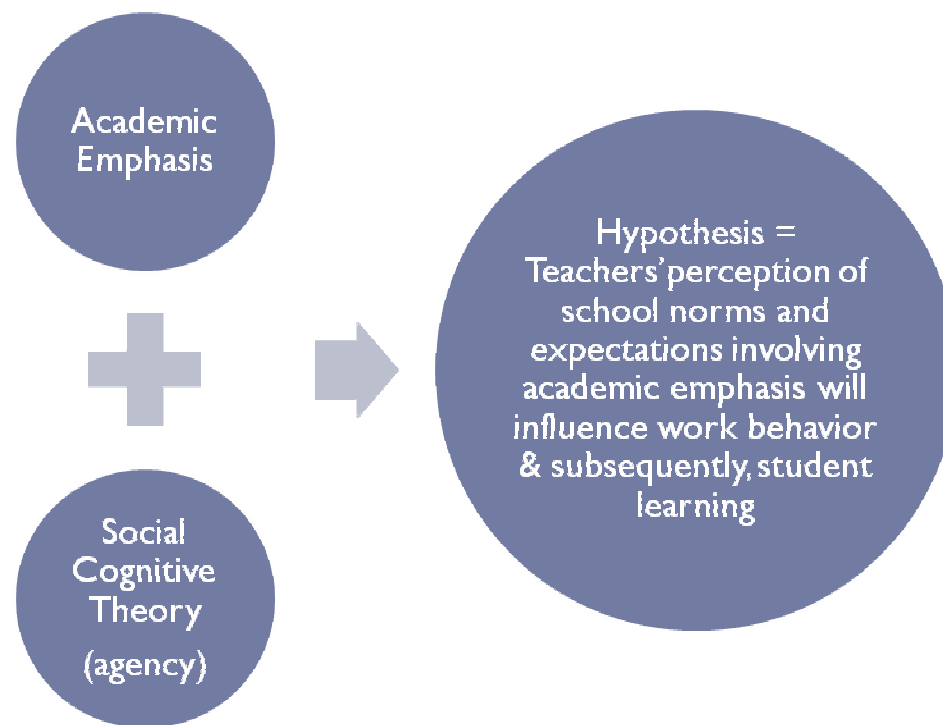
- ▶ **Do theory based research (Gall et al. 2003)**
  - ▶ Will produce outstanding study
  - ▶ Testing a theory developed by someone else
  - ▶ Usually involved a hypothesis (a testable prediction about observable phenomena)



# Identifying a Research Problem – Some Strategies

---

- ▶ Goddard et al. – How a school's level of academic emphasis would affect students' academic achievement



# Identifying a Research Problem – Some Strategies

---

- ▶ Replicating or extending previous research
  - ▶ Repeating or improving upon other research
- ▶ Types:
  - ▶ To check the findings of a breakthrough study
    - ▶ Eg. Increase school year by 10 days, increase school day to 6 hours will increase reading and mathematics achievement (Wiley & Harnischfeger)
      - Daniels & Haller's study – negatively affected mathematics achievement but not reading
  - ▶ To check the validity of research findings across different populations
    - ▶ Necessary to determine the limits of generalizability

# Identifying a Research Problem – Some Strategies

---

## ▶ Types

- ▶ To check trends or change over time
  - ▶ Research findings valid 20 years ago may not be valid today
- ▶ To check important findings using different methodology
  - ▶ A previous methodology may have flaws
  - ▶ E.g. Experimental studies – control and experimental groups
  - ▶ New method – more control or include qualitative inquiry
- ▶ To develop more effective or efficient interventions
  - ▶ E.g Researchers have developed instructional programs or procedures which have beneficial outcomes
  - ▶ Other replicates and extend the study to determine whether it can be improved
  - ▶ E.g A developed reading program using books is being extended by using videos

# Formulating a Research Problem

---

What is a research problem?

- A problem – a set of conditions needing discussion, solutions, and information
- Implies the possibility of empirical investigation, i.e., data collection and analysis

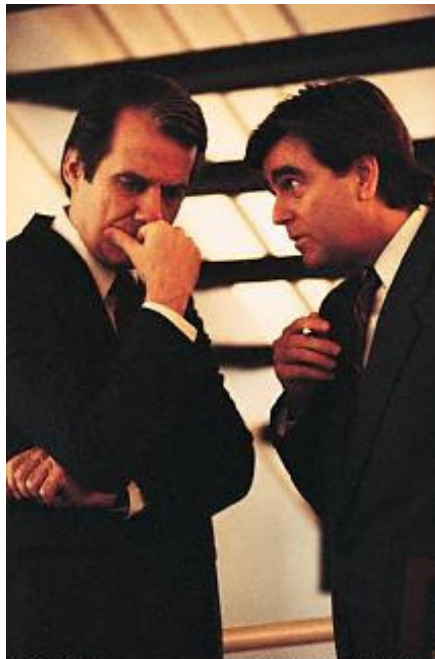
What it is not?

- How to do something
- A vague or too broad proposition
- A value question
- (but you can start here)

# Problem

---

1. A question raised for inquiry, consideration or solution
2. An intricate unsettled question



# What do we do with Problems?

---

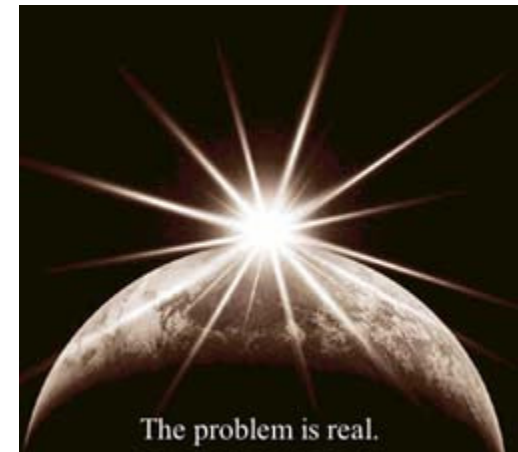
- ▶ Ignore them
- ▶ Talk about them
- ▶ Try to solve them



# What is a Research Problem?

---

- ▶ It is a problem that someone would like to investigate.
- ▶ It is considered a situation that needs to be changed or addressed.
- ▶ These problems consist of:
  - ▶ Areas of concern
  - ▶ Conditions to be improved
  - ▶ Difficulties to be eliminated
  - ▶ Questions seeking answers



# The Research Problem

---

- ▶ In educational research, the research problem is typically posed as a question.





# Factors to consider in Selecting a Research Problem

---

- ▶ The topic should be *important (significant)*
  - ▶ Writing a thesis or dissertation is an exercise to learn how to conduct research.
  - ▶ However, graduate students can learn the research process on an important topic just as easy as learning the research process on a piddle topic!



# More Factors

---

- ▶ Consider the *feasibility* of the project.
  - ▶ How much *time* do you have available
    - ▶ Do you really want to do a longitudinal study that will take 3 years to complete for a M Ed dissertation?
  - ▶ How *difficult* is it. Are data available?
  - ▶ How much will it *cost*?



## More Factors

---

- ▶ Make sure the topic is *ethical* to study



# More Factors

---

- ▶ You should have a *personal interest* in the topic.
  - ▶ By the time you are done, you may really be tired of the topic



**I'm tired.**

## More Factors

---

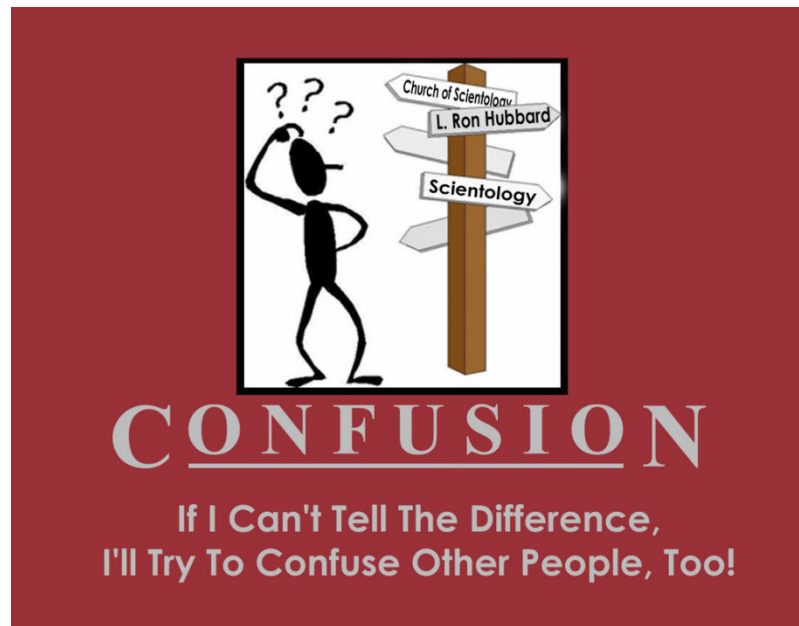
- ▶ The “*newness*” of the topic may hold you interest longer, however there is some value in repeating previous research



# More Factors

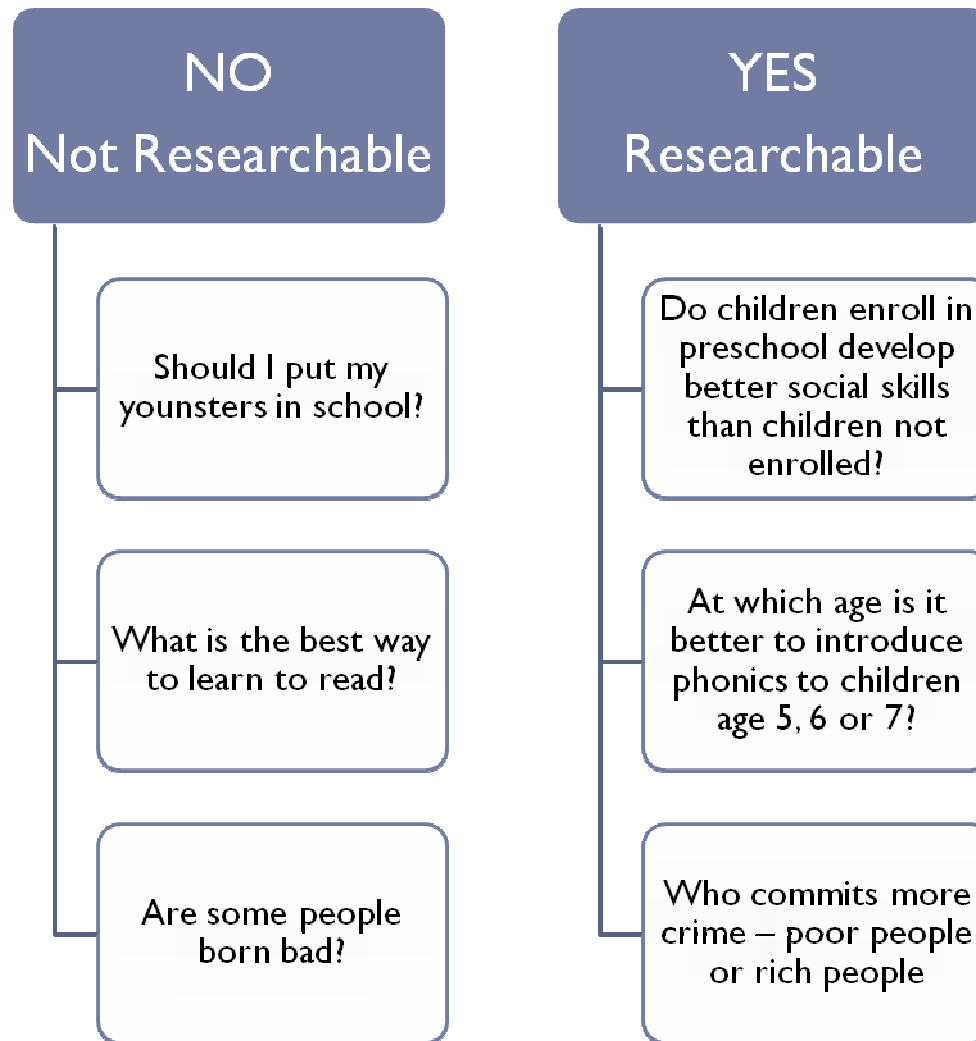
---

- ▶ Make sure the research question is *clear*.



# Researchable vs. Non-researchable Questions

---



# Steps in “Zeroing In” on a Problem

1

- Identify a broad area that interests you

2

- Read the literature

3

- Narrow the area to 2 or 3 topics

4

- Thoroughly examine the literature on the 2-3 topic

5

- Select a single problem from 2-3 topics



# Refining the Topic

---

- ▶ The topic has to be “sized”!
  - ▶ Generally this means reducing the scope of the topic, occasionally it might be expanded.
  - ▶ Graduate students often select topics that are too broad



I want to research the  
effect of providing  
immediate feedback  
to university students!



Way too general and broad!

# Refining the Topic

---

- ▶ The topic has to be “clarified”!
  - ▶ The topic needs to be reworded so that it states clearly and unambiguously the matter to be investigated, the variables to be investigated, and participants, if any, that will be involved.



I want to research the  
impact of providing  
immediate feedback via e-  
Instruction responders in  
AEE graduate classes!



Much Better!

# Refining the Topic

---

- ▶ A series of research questions or one or more hypotheses, or both, should be stated.
- ▶ Such questions and hypotheses orient the study, add cohesiveness, and are essential in helping solve the problem





Does the use of e-Information responders to provide immediate feedback to graduate students in AEE classes:

1. Increase student learning?
2. Improve student evaluations of classes?

## It is hypothesized that

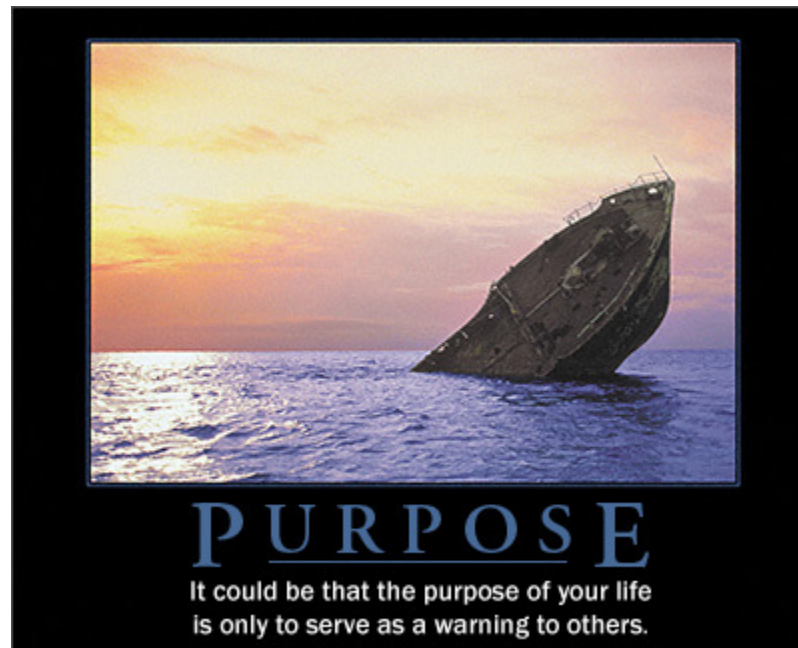
---

- ▶ Graduate students in AEE classes who use the e-Instruction responders will score higher on mid-term and final exams than graduate students in AEE classes who do not use the e-Instruction responders.
- ▶ Graduate AEE classes in which e-Instruction responders are used will have higher course evaluations than will graduate AEE classes in which the e-Instruction responders were not used.

# PURPOSE OF THE STUDY

---

- ▶ The statement:
  - ▶ The purpose of this study is to . . .
  - ▶ It should imply the *question*, define the *variables* for the purpose of the study, and define the *population* of the study)

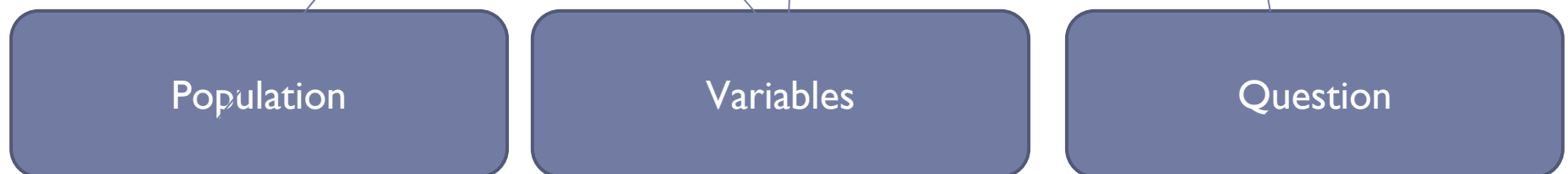




# PURPOSE OF THE STUDY

---

- ▶ The purpose of this study is to determine the competencies needed by Vocational Education and Training (VET) practitioners no matter the working environment, and the feasibility of a prototype VET competency-model.



# PURPOSE OF THE STUDY

---

- ▶ The purpose of this study was to determine the attitude held by educators in the implementation process of the South African national curriculum; Outcomes-Based Education system (OBE), since inception until present day.

# PURPOSE OF THE STUDY

---

- ▶ The purpose of this study was to determine computer skills need for Science teachers to be able to integrate technology into Science learning and instruction.
- ▶ The purpose of this study was to determine secondary science teachers and students attitudes toward Microcomputer-Based Laboratory (MBL) in seven educational districts in Saudi Arabia (Makkah, Maddina, Riyadh, Western province, Qassim, Assir, and Jazan)

# ACTIVITY

---

- ▶ **Which of the following statements is phrased as a research problem?**
- ▶ The purpose of the study is to determine:
  - ▶ A. whether the suspension policy should be changed.
  - ▶ B. the truth of the proposition that American education has encouraged and elite class in the United States.
  - ▶ C. how students can overcome test anxiety.
  - ▶ D. if there is a difference in the mean gain scores in reading achievement between students taught word attack skills and those taught comprehensive skills.

# ACTIVITY

---

- ▶ **Which of the following statements is NOT phrased as a research problem?**
- ▶ The purpose of the study is to investigate:
  - ▶ A. if there is a positive relationship between the number of books a child owns and reading readiness scores.
  - ▶ B. how Lubbock schools can involve parents in their educational program.
  - ▶ C. how Ms. Hembree, an elementary school principal, encourages faculty to assume instructional leadership roles during an academic year.
  - ▶ D. the legal principles applied in educational cases decided by the U.S. Supreme Court under the Chief Justice who recently retired.
  - ▶ E. what it means to teach a handicapped child mainstreamed into Mr. Stout's seventh-grade class.

# ACTIVITY

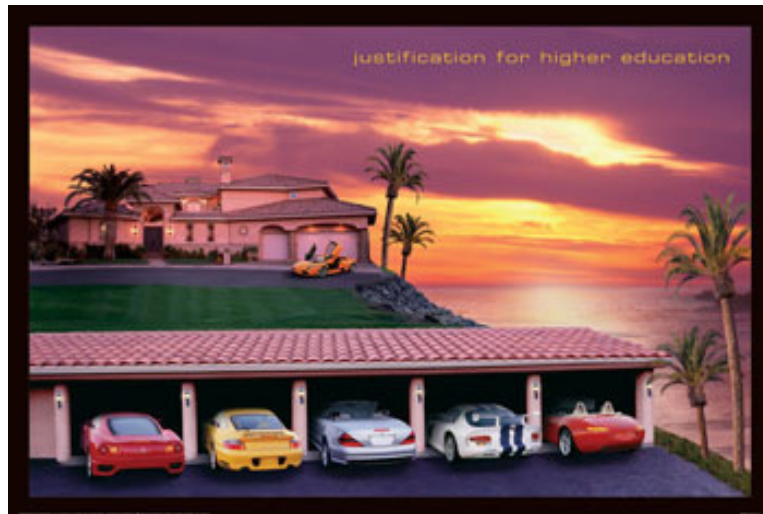
---

- ▶ **Which of the following statements is NOT a research problem as stated?**
- ▶ A. The purpose of this study is to describe and analyze the effect of new admission standards on grade point averages during the first year of study of the 2002 in-coming class of art education doctoral students at Penn State University.
- ▶ B. This study investigates if there is a relationship between teacher questioning style and retention of learning.
- ▶ C. This study investigates faculty morale.
- ▶ D. This study tests the hypothesis that retention of learning is higher among students who discover generalizations than students who learn by rote memory.

# JUSTIFICATION

---

- ▶ Studies need to be justified, that is:
- ▶ **Why this particular subject is important to investigate**



# STATEMENT OF THE PROBLEM - SECTION

---



The diagram illustrates the components of the 'Statement of the Problem' section. It features a large, light blue arrow pointing to the right, which serves as a background for three dark blue rounded rectangular boxes. The boxes are arranged horizontally and contain the text 'Justification', 'Purpose of the Study', and 'Research Question' from left to right. The arrow's tail is on the left, and its head points towards the right edge of the slide.

Justification

Purpose of  
the Study

Research  
Question

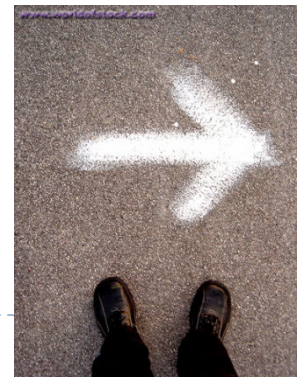


# Writing the Problem Statement

---

## ► Guide the reader

- Leading the reader directly to the purpose of the study and the questions that you will be addressing.
- Indicate that this is a problem that has not been previously addressed by the research literature.
- If, however, the problem has been previously addressed, you will need to indicate that you are studying a new aspect of the problem (a different twist), are verifying the results of a previous inquiry in some new or unique fashion, or are testing the results with a previously untested population.



# Writing the Problem Statement

---

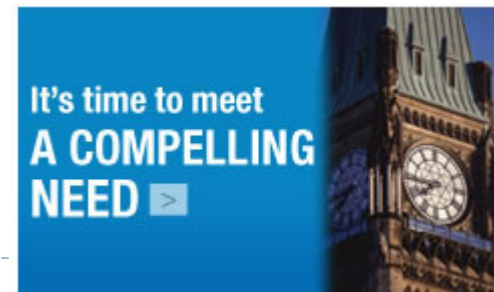
- ▶ **Support your problem statement**
  - ▶ Begin with a review of the literature.
  - ▶ Find recent studies
    - ▶ preferably less than a year old, where the author indicates suggestions for future research.



# Writing the Problem Statement

---

- ▶ Identify a compelling need
  - ▶ An effective problem statement clearly describes the nature and extent of the problem you expect to solve with your research study.
  - ▶ The problem statement also identifies factors/variables that contribute to the problem.
  - ▶ You will need to provide citations for this section - your opinion is NOT enough!
  - ▶ The reader must be able to discern the seriousness of the problem and understand the need for the study and its further elucidation.



# Writing the Problem Statement

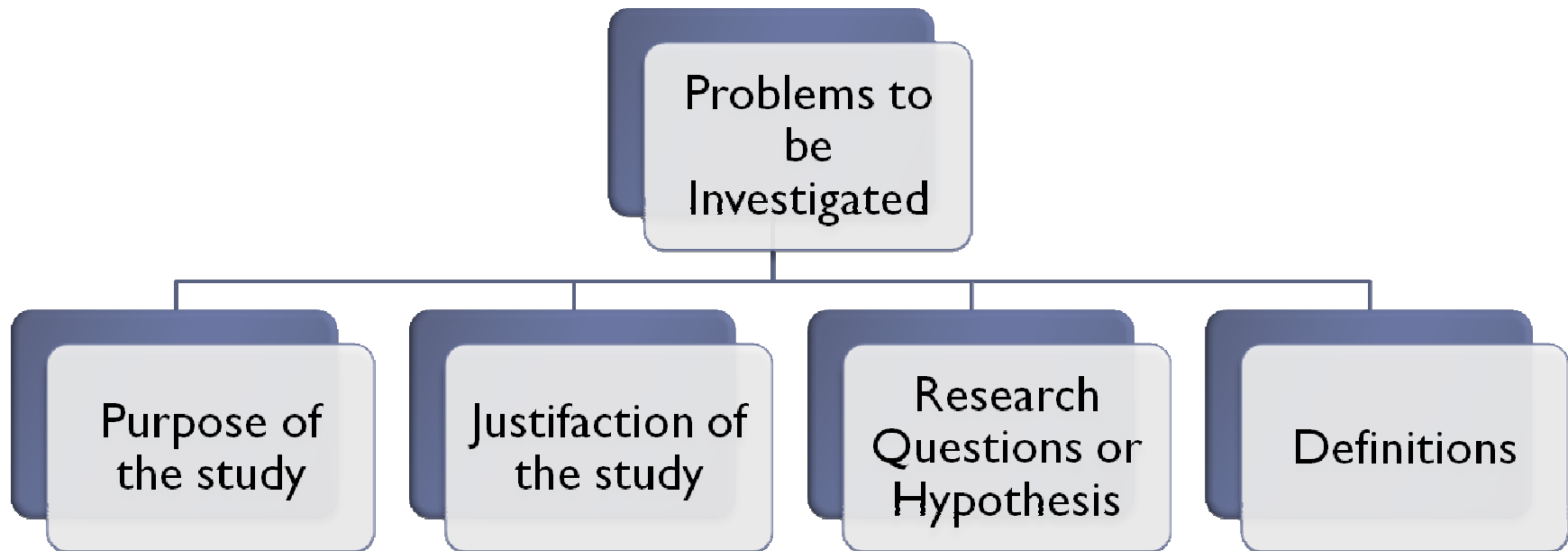
---

- ▶ Include 4 key elements

1. Explain the general problem that supports the need for the study. Include references - and be sure they're recent!
2. Explain the specific problem in a clear, concise manner. Keep to one sentence - two at most.  
If you cannot clearly and concisely identify the problem, then you don't have a study!
3. Briefly summarize the methodology and research design. Make sure it is appropriate to the problem being presented.  
Remember that the problem, purpose, and questions drive the methodology, not the other way around.
4. Identify the general population. The population is directly related to the problem - make sure it is clear why this population faces this problem.

# PROBLEMS TO BE INVESTIGATED

---



# Research Questions

---

- ▶ **Sample Research Questions**
  - ▶ Does the use of e-Information responders to provide immediate feedback to graduate students in AEE classes increase student learning?
  - ▶ Does the use of e-Information responders to provide immediate feedback to graduate students in AEE classes improve student evaluations of classes?

# Research Questions

---

- ▶ One may have several research question
- ▶ For data analysis avoid research questions with an “and”
  - ▶ Does the use of e-Information responders to provide immediate feedback to graduate students in AEE classes increase student learning and improve student evaluations of classes?

One part of the question may be yes and the other no. It is best to compartmentalize everything.

# The Hypothesis

---

- ▶ In proposing or reporting research, two types of hypotheses are normally stated:
  - ▶ Directional
    - ▶ AEE graduate students will learn more in classes in which e-Instruction responders are used than in classes where they are not used.
  - ▶ Null
    - ▶ There will be no difference in AEE graduate student learning in classes in which e-Instruction responders are used and in classes in which they are not used.



# The Hypothesis

---

- ▶ It is possible to have a nondirectional hypothesis. This is stated the same as a null hypothesis.
- ▶ When one performs a statistical test, they are actually testing the Null hypothesis

# Defining Terms

---

- ▶ There are 3 ways to clarify important terms or meaning in a research question:
  - 1) use of constitutive definition (the dictionary approach)
  - 2) use of proper example(s)
  - 3) use of operational definition (specifying operations used to measure or identify examples of the term)

# MAJOR SECTIONS

---



Problems  
to be  
Investigated

Background  
and Review  
of Related  
Literature

Procedures

# Review of Literature

---

- ▶ By the time you finish your research, you should know more about the topic than anyone else, including members of your committee.
- ▶ You accomplish this by a thorough review of existing research regarding the problem.

# Review of Literature

---

- ▶ In a thesis or dissertation, this section may be 10-50 pages.
- ▶ In a journal article it may only be 2-3 pages at the most.
- ▶ You have to prove you know the research but can't go overboard because of page limitations on manuscripts.

# Review of Literature

---

- ▶ It is generally best to start globally and then narrow it down to the specific research question you have.

# Review of Literature

---

- ▶ You want to synthesize and merge what others had done, not just string a bunch of quotes together!!!!

YES

- ▶ Moving around the classroom helps to maintain student interest (Banks, 2001; Carpenter, 1996; James, 1998)
- ▶ Banks (2001) says it is important to move around in the classroom.

NO

- ▶ Carpenter (1996) believes movement in the classroom helps students to focus on the teacher.
- ▶ James (1998) says teachers should change their position every 3-4 minutes in order to keep student attention.

# PROCEDURES (METHODS)

---

- ▶ Describe the research methodology (correlational, descriptive, etc.) you are used (or plan to use) and why.
- ▶ Describe the population you are studying and how it is described.
- ▶ If a sample is used, tell how big the sample is, why that sample size was chosen, and the sample was selected (i.e. stratified random sample, cluster sample, etc.)



## PROCEDURES (METHODS)

---

- ▶ If the research is experimental, describe the research design and what was done to control extraneous variables.
- ▶ If the research is historical discuss sources of data.

# PROCEDURES (METHODS)

---

- ▶ **Describe the research instrument used.**
  - ▶ How many sections and items or on it and how do people respond.
  - ▶ What is the rating scale? What is a high score? What is a low score?
  - ▶ How was it developed.
  - ▶ Was it field tested?
  - ▶ How do you know it is valid.
  - ▶ How do you know it is reliable.

# PROCEDURES (METHODS)

---

- ▶ Describe how the data were collected (Personal interview, Mail survey, etc.)
- ▶ When and where were the data collected
- ▶ What was done about non-respondents?
- ▶ How were the data coded.\
- ▶ Describe the statistical process used in analyzing the data. Why did you use the statistics you did.

# Introduction Section or Chapter

---

- ▶ The introductory section introduces the problem to be studied and could range from 3 or so paragraphs to several pages
- ▶ This is often followed by a section titled “Need for the Study”. This is 1- 3 paragraphs in length. Here you make the case for studying the problem you have selected.

# Introduction Section or Chapter

---

- ▶ Statement of the Problem is next. This is one or two sentences clearly stating what it is being study. If often starts with “The purpose...”

The purpose of this study is to determine if immediate feedback in AEE graduate classes improves student learning and course evaluations.

# Introduction Section or Chapter

---

- ▶ Research questions and/or hypothesis follow.
  - ▶ Descriptive research often uses just research questions. It is permissible to have a hypothesis.
  - ▶ In experimental, quasi-experimental, correlational or ex post facto research a hypothesis is generally expected. You can also have research questions if desired.



THANK YOU