Research Methodology 101

What question do you have about the research methodologies in these studies?

1. A study assessing student learning outcomes in 2 broad categories (concepts, techniques) by examining student research journals in 1 section of an elective information literacy course in fall semester.
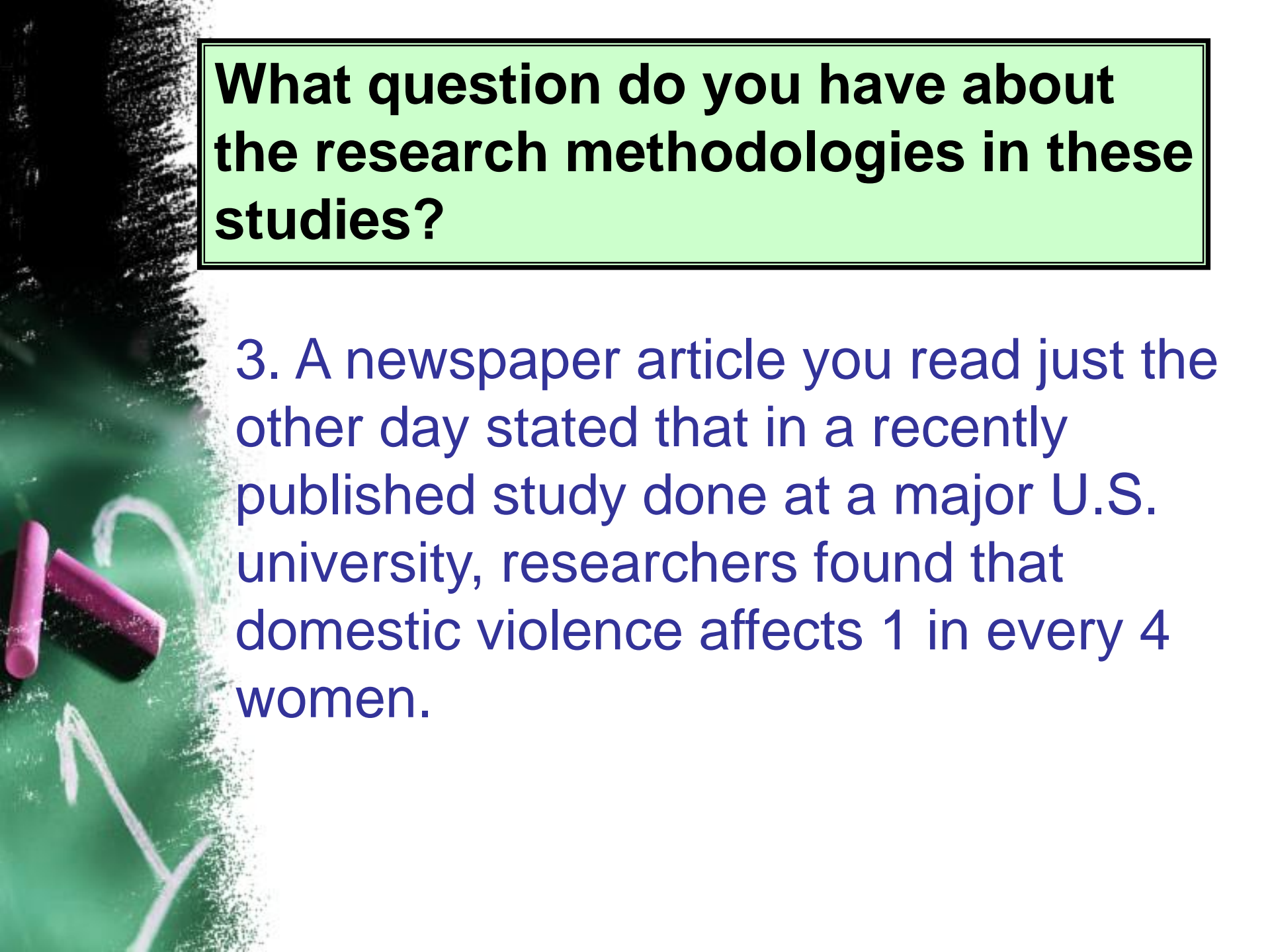
What question do you have about the research methodologies in these studies?

2. An experimental study that proposes a fund allocation formula for academic library collections based on the following:

average of overall book price + average of overall serial prices * degree level (10 for undergraduate to 30 for doctorate) / the number of students enrolled in degree program as majors + the total number of faculty in the department * three * total number of students in program.

$$(OAB + OAS) * D/(Sn +(Fn*3))*Sn$$

N.B. Not a standard formula

What question do you have about the research methodologies in these studies?

3. A newspaper article you read just the other day stated that in a recently published study done at a major U.S. university, researchers found that domestic violence affects 1 in every 4 women.
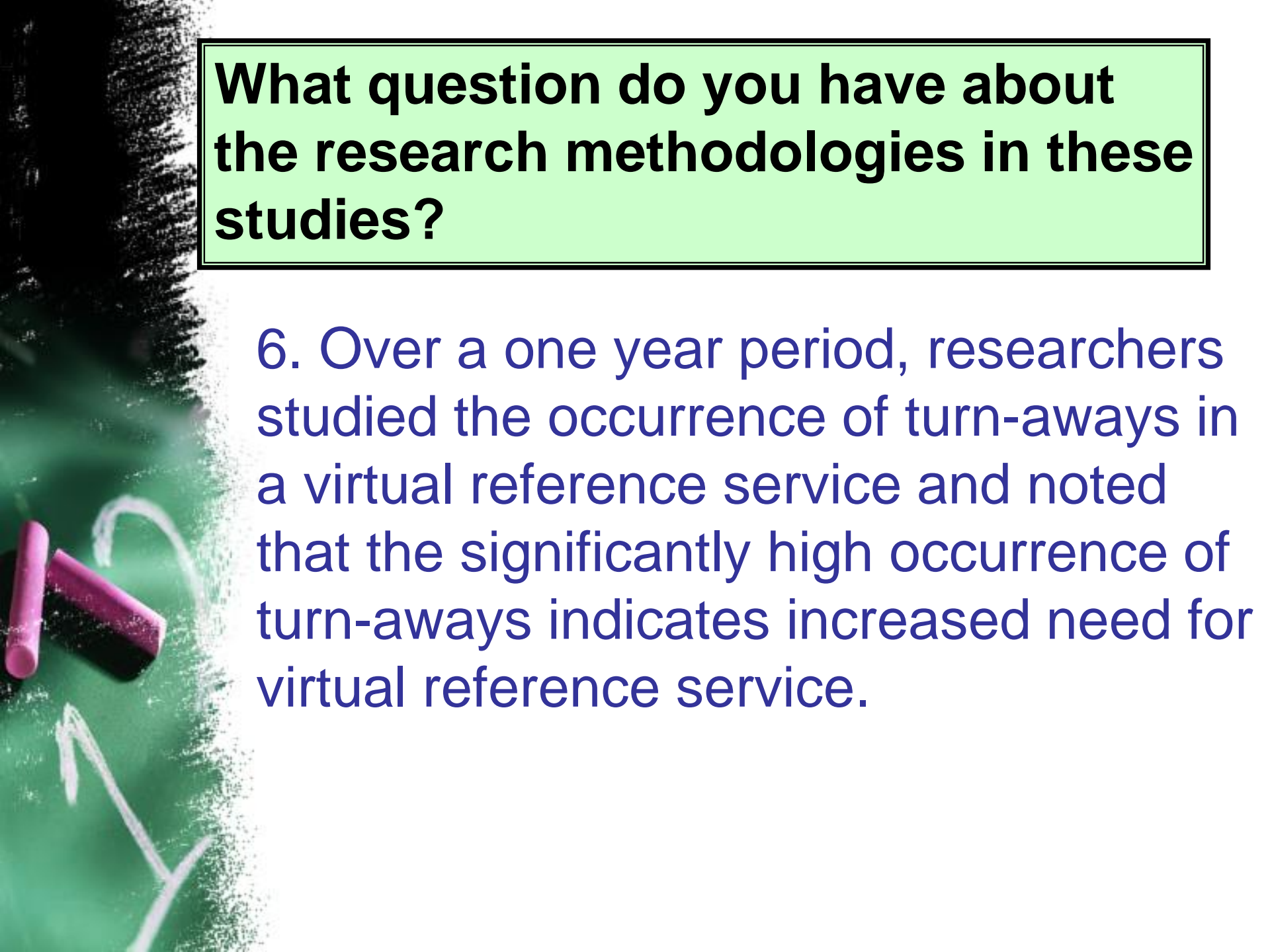
What question do you have about the research methodologies in these studies?

4. A 2004 article on a library use and services satisfaction study that used as its measurement tool a survey given to every nth person entering the library building on 40 randomly selected days throughout the school year.

What question do you have about the research methodologies in these studies?

5. An outcomes assessment research project of a 5 year old IL program in which all incoming freshmen must participate. Total student population on campus is divided between 32% freshmen to senior (or 4 year) and 68% transfer students.

What question do you have about the research methodologies in these studies?

6. Over a one year period, researchers studied the occurrence of turn-aways in a virtual reference service and noted that the significantly high occurrence of turn-aways indicates increased need for virtual reference service.

What question do you have about the research methodologies in these studies?

7. A survey of faculty found that the majority of those interview interacted most with librarians at the reference desk. The researchers concluded that most faculty view librarians in a servile role.

First things first

1. Basics
2. Topic ideas
3. Typical methodologies
4. Common pitfalls
5. Getting started and putting it all together
6. Questions/discussion

Basic steps of a research project

►Find a topic➔What, When

►Formulate questions➔What, Why

►Define population➔Who, When

►Select design & measurement➔How

►Gather evidence➔How

►Interpret evidence➔Why

►Tell about what you did and found out

Topic ideas

▶**Online chat reference**
- Types of questions
  - **Subject? Type?**
  - **# of turnaways***
- Difference in discourse
  - **In-person vs. chat**
- Partnership studies
  - **Similar libraries with same software**

Topic Ideas

► E-book usage

► Usability studies of

- Online tutorial(s)
- 'My Library" portals

► Analysis of library web sites or library instruction sites or pathfinders by best practices

► Student learning outcomes in LI programs

Types of methodologies

▶ QuaLitative Measures

- Descriptive
- Numbers not the primary focus
- Interpretive, ethnographic, naturalistic

▶ QuaNtitative Measures

- N for numbers
- Statistical
- Quantifiable

QuaLitative measures

►Content Analysis
- Analyzed course syllabi of library use through discipline and level (
- Studied online tutorials, applying best practices recommendations

QuaLitative Measures

►Discourse Analysis

- Analyzed student responses in writing and discussions to a short film & compared findings to parallel study with LIS grad Ss (Vandergrift)

►Focus Groups

- Discussed how participants experience & use the library (Von Seggern & Young)

- Studied why students use the Internet and how much time they use it (Wilson)

QuaLitative Measures

►Interviews

- Studied 25 HS students' web use for research assignments (Lorenzen)
- Looked at what type of information first year students need and how they go about acquiring it (Seamans)

►Observation (obtrusive)

- Observed students as they conducted online research & noted their activities (Dunn)

►Observation (Unobtrusive)

- Retrieval of discarded cheat sheets to analyze academic misconduct (Pullen et. al.)

QuaLitative Measures

►Think Aloud Protocols
- Studied how users navigate a library web site (Cockrell & Jayne)

►Usability testing
- Examined students' mental models of online tutorials (Veldof & Beavers)

QuaNtitative measures
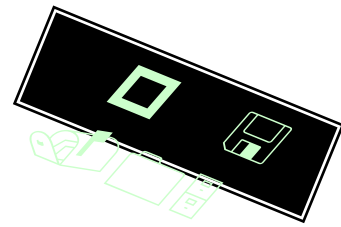
►CompareThings

►Count Things

►Survey People About Things

QuaNtitative measures
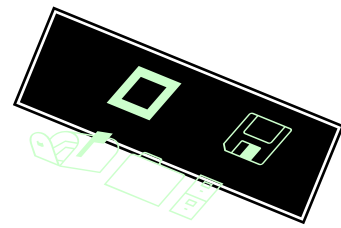
►Comparison studies

- Experimental and control groups
- Instructional methodologies (Colaric; Cudiner & Harmon)
- Program assessment using before/after analysis of research papers(Emmons & Martin)

QuaNtitative measures
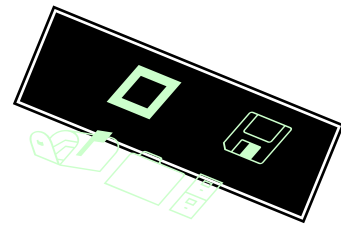
►Pre & Post Tests (**Van Scoyoc**)

►Measures & Scales

- **Bostick's Library Anxiety Scale (Onwuegbuzie & Jiao; Van Scoyoc)**
- **Procrastination Assessment Scale (Onwuegbuzie & Jiao)**

QuaNtitative measures
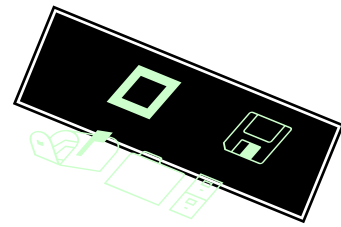
►Numeric Studies

- Citation Analysis→Bibliometrics (Dellavalle)
- Webometrics (Bar-Ilian)

Ready Made Data Sets

► National Survey of Student Engagement (**Whitmire**)

► College Student Experiences Questionnaire (**Kuh and Gonyea**)

► The Web

- Internet Archive (Ryan, Field & Olfman)

- Electronic journals (Dellavalle)

► Library server logs

Common Pitfalls

► Problems with population
- *Sampling?*
  - **Representativeness?**
  - **Self-selection?**

Research Problem #1

A study assessing student learning outcomes in 2 broad categories (concepts, techniques) by examining student research journals in **1 section** of an **elective** information literacy course **in fall semester**.

Research Problem #4

A 2004 article on a library use and services satisfaction study that used as its measurement tool a survey given to **every nth person entering the library building** on **40 randomly selected days** throughout the school year.

Research Problem #5

An outcomes assessment research project of a 5 year old IL program in which **all incoming freshmen** must participate. Total student population on campus is divided between 32% **freshmen to senior (or 4 year) and 68% transfer students.**

Common Pitfalls

▶Problems with operationalization
  - Defining of what is measured

Research Problem #2

 An experimental study that proposes a fund allocation formula for academic library collections based on the following:

average of overall book price + **average of overall serial prices** * degree level (10 for undergraduate to 30 for doctorate) / the number of students enrolled in degree program as majors + the total number of faculty in the department * three * total number of students in program.

$$(OAB + OAS) * D/(Sn +(Fn*3))*Sn$$

N.B. Not a standard formula

Research Problem #3

A newspaper article you read just the other day stated that in a recently published study done at a major U.S. university, researchers found that **domestic violence affects** 1 in every 4 women.

Research Problem #4

A 2004 article on a library use and services **satisfaction** study that used as its measurement tool a survey given to every <u>nth person entering the library building</u> on <u>40 randomly selected days</u> throughout the school year.

Research Problem #5

Over a one year period, researchers studied the occurrence of **turn-aways** in a virtual reference service and noted that the significantly high occurrence of **turn-aways** indicates increased need for virtual reference service.

Common Pitfalls

▶Problems with generalizability
- False conclusions
- Transformations

Research Problem #1

A study assessing student learning outcomes in 2 broad categories (concepts, techniques) by examining student research journals in **1 section** of an **elective** information literacy course **in fall semester**.

Research Problem #7

A survey of faculty found that the majority of those interviewed interacted most with librarians at the reference desk. The researchers concluded that **most faculty view librarians in a servile role**.

Keep In Mind That

►No study is perfect

►"All data is dirty is some way or another; research is what you do with that dirty data" (**Manuel**)

►Measurement involves making choices

Be Critical About Numbers

►"Every statistic is a way of summarizing complex information into relatively simple numbers." (**Best**)

►How did the researchers arrive at these numbers?

►Who produced the numbers and what is their bias?

►How can key terms be defined & in how many different ways?

Be Critical About Numbers

► How was the choice for the measurement made?

► What type of sample was gathered & how does that affect result?

► Is the statistical result interpreted correctly?

► If comparisons are made, are they appropriate?

► Are there competing statistics?

Getting Started

► Read to learn; read to analyze

- About research methodology
- Studies on similar topics
- Interesting studies
- Non-library studies

Getting Started

►Finding a topic needn't be traumatic

- ● Work projects→ Research studies
  - ▪ **P&T overhaul**
  - ▪ **Library GO Bond Proposal Project**
  - ▪ **Library workshop trends**
  - ▪ **User repair strategies**

Getting Started

►Data collection involves agreement & consent

►Forge partnerships

►At some point you will need to leave the comfort zone of reading and literature gathering and …

Questions?

Foundation and Methodological Aspect of Research

Research Problem

- A research problem is an issue which motivates a researcher to conduct a study on it.

- When writing a research proposal, the research problem is the most important part because it is the primary factor in determining whether a research should be carried out or not

- It focuses the reader's attention on the research proposed, and the implications for carrying out the research

- A research problem can be identified through the research objectives, statements of problems and research questions

Research problems arise from several sources:

- **Interest and experience of the researchers**
    - The researcher intends to further his knowledge in the aspect that interests him
- **Existing theory**
    - When doubts arise over existing theory and the researcher wants to test the theory
- **Replication of previous research**
    - To conduct the same research on different subjects in different locations (based on the prediction that there may be different results of the same research is carried out)
- **Contradictory results of past research**
    - Contradictory results from several studies on a specific topic

Important aspects in stating a research problem

- The research problem should be **practical** – it can be investigated and the data collected can be analysed

- Should be **important** – it should be a meaningful investigation.

  - It must have practical and theoretical importance with implications for, or adding to, the knowledge and experience of the researcher

  - It should also contribute to the existing body of knowledge;

- The research problem must also state the **Research target** – the population which the researcher intends to study

- Must also state the main **variables** that will be studied e.g. thinking styles and academic performance, in the research "Effects of thinking styles on the academic performance of university students";

- Must be stated **clearly and precisely** – enable readers to understand the issues being studied.

Inconsistency of statements in a research problem

- A research problem exists when there is a conflict of statements or inconsistent evidence concerning an issue being studied.

  - E.g. some past research findings showed that there was a positive effect of humour illustration on reading motivation, while other findings indicated a negative effect.

    - The research problem is embedded in the inconsistency of evidence or conflicting statements.

    - To investigate this problem, the research is conducted to examine the effect of humour illustration on reading motivation (research objective).

Inconsistency of statements in a research problem

- A problem also exists when there are incompatible theories and practices related to an issue.
    - e.g. problem exists because theory and practice are inconsistent:
        - a theory states that income is a factor of work satisfaction; a high income worker will enjoy high work satisfaction;
        - A researcher observed that in practice, some high income workers suffer low levels of work satisfaction;
        - Due to insufficient data and research evidence, the researcher conducts a study to examine whether there is a relationship between income and work satisfaction in his target population, and to determine whether the relationship is positive or negative.

From Research Interest to Research Topic

- Research Interests
  - What is your research interest?
  - What do you want to work on?
    - Reverse engineering of software systems
    - Resource scheduling in cloud computing environments
    - Software Reuse in software industry

- Narrow down to the research topics
  - Through literature survey, discussions with colleagues, visiting library
    - Software clustering for remodularisation of software systems
    - Cost reduction in tasks scheduling in cloud computing environments
    - Classification and choice of reuse techniques in software development

From the Research Topic to Motivate the Question

1. Name your <u>topic</u>:

   - *I am learning about/studying/working on……*

   - **Example**: I am studying ***software clustering*** for remodularisation of software systems

   Your topic - what you are writing about

2. Suggest a <u>question</u>:

   - *I am studying X because I want to find out who/what/when/where/whether/why/how ….*

   - **Example**: I am studying ***software clustering*** for remodularisation of software systems *because I want to find out how experts cluster software modules.*

   Your question – what you do not know about

From the Research Topic to Motivate the Question

3. Motivate the question:

   - *.... In order to understand how, why, or whether*

   - **Example:** I am studying ***software clustering*** for remodularisation of software systems because I want to find out how experts cluster software modules *in order to understand how to design a software clustering technique that can optimally produce a high-level abstraction of the software design.*

   Rationale - why you want to know about it

Formulate a Problem

- Problem is a situation that has:
  - **A condition** that needs to be resolved, e.g.
    - The hole in the ozone layer is growing
    - The complexity of IS in our company become unbearable
  - **Costs** of that condition that you do not want to pay/incur, e.g.
    - Many will die from skin cancer
    - It will cost to our department money and time to integrate a new software module X

  OR:

- **Benefit** of having this condition resolved
  - If we fix ozone hole – we save many lives
  - If we reduce the complexity and consolidate the software – not only the X module but any further modifications will cost much less.

The greater the costs or the benefit, the more significant the problem

Search for a practical problem:

- The practical problem can serve <u>as a good motivation</u> for your research project;

- **Condition :**
  - What problem you (or your colleagues) are observing in companies?
  - What are the evidences?

- **Cost:**
  - What kind of trouble it causes?
  - Who is interested to improve it? Why?

  Example

  Requirements documents are incomplete, inconsistent, inadequate and this has a high negative impact on the quality of the resulting system

Formulate a research problem

- **Condition:**
  - Not knowing or understanding something that you think you (and your readers) should

- **Cost:** ("So what?")
  - Might have no explicit or immediate cost -> difficult to grasp
  - Usually, it is some further ignorance and misunderstanding which is more significant than the condition

Example: *what is the cost of "not understanding why elicitation methods fail in delivering quality requirements documents"? – If we do not understand this (the research question) then, 50% of projects will continue to fail. Getting this understanding (research problem) will help to solve the practical problem.*

Formulate a research problem – Further Elaboration

▶ **Enrich your research problem by including:**

1. **The (base) statement based on past research findings, theory, or practice on top of a situation concerning a current issue.**

   ▶ **E.g. There was a significant difference between computer-based testing (CBT) and paper-pencil testing (PPT) on test performance (Friedrich, 2012; Kim & Boo, 2011).**

2. **Inconsistent or conflicting statements to the base statement – based on past findings, theory or practice. A problem exists when there are inconsistent or conflicting statements with the base statement.**

   ▶ **E.g. Some studies reported that there was no significant difference between CBT and PPT on test performance (Richards & Tony, 2012; Mason, 2012). …..**

3. Speculations based on inconsistent statements which need to be studied.

   ▶ E.g.: (i) Is computer-based testing incremented in my institution effective in increasing test performance of the students? (ii) which is more effective, CBT or PPT?

Bear in mind …

* **During your project you can undertake either applied or pure research.**

* **The subject of your project is always related to a Research problem!**

* **You have a research problem if and only if you and you readers agree that you and they do not know or understand something, but should.**

Pure Research vs Applied Research

- **Pure research**:
  - A solution to a research problem has no explicit application to the real world (a practical problem)
  - The rationale defines what **you want to know**
- **Applied research:**
  - A solution to a research problem can be applied to a practical problem
  - The rationale defines **what you want to do**.

Example of Applied Research Problem

* Example:

* **Topic**: I am studying *software clustering* for remodularisation of software systems,

* **Question**: because I want to find out how experts cluster software modules, ->*implies that we do not know something*

* **Rationale:** how to design a software clustering technique that can optimally produce a high-level abstraction of the software design ->*implies that we should do something*

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Conclusion:

✳ At this point you should be able to answer the following questions:

▶ What is a topic of your research

▶ Do you have a practical problem to motivate your research?

✳ your research is applied, or

✳ your research is fundamental

▶ What is your research problem?

▶ What is a possible impact of your solution?

from The Craft of Research

References

- Slides "Methodological Aspects of Research" of Prof. Colette Rolland

- Chua Yan Piaw, "Mastering Research Methods", McGraw Hill, 2012

Plagiarism

What It is and How to Recognize and Avoid It

http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

What is Plagiarism and Why is it Important?

► In college courses, we are continually engaged with other people's ideas: we read them in texts, hear them in lecture, discuss them in class, and incorporate them into our own writing. As a result, it is very important that we give credit where it is due. Plagiarism is using others' ideas and words without clearly acknowledging the source of that information.

How Can Students Avoid Plagiarism?

- To avoid plagiarism, you must give credit whenever you use
  - another person's idea, opinion, or theory;
  - any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
  - quotations of another person's actual spoken or written words; or
  - paraphrase of another person's spoken or written words.

How to Recognize Unacceptable and Acceptable Paraphrases

- Here's the ORIGINAL text, from page 1 of *Lizzie Borden: A Case Book of Family and Crime in the 1890s* by Joyce Williams et al.:

- The rise of industry, the growth of cities, and the expansion of the population were the three great developments of late nineteenth century American history. As new, larger, steam-powered factories became a feature of the American landscape in the East, they transformed farm hands into industrial laborers, and provided jobs for a rising tide of immigrants. With industry came urbanization the growth of large cities (like Fall River, Massachusetts, where the Bordens lived) which became the centers of production as well as of commerce and trade.

Here's an UNACCEPTABLE paraphrase that is **plagiarism:**

▶ The increase of industry, the growth of cities, and the explosion of the population were three large factors of nineteenth century America. As steam-driven companies became more visible in the eastern part of the country, they changed farm hands into factory workers and provided jobs for the large wave of immigrants. With industry came the growth of large cities like Fall River where the Bordens lived which turned into centers of commerce and trade as well as production.

▶ **What makes this passage plagiarism?**

▶ It is considered plagiarism for two reasons:

    ▶ the writer has only changed around a few words and phrases, or changed the order of the original's sentences.

    ▶ the writer has failed to cite a source for any of the ideas or facts.

▶ **If you do either or both of these things, you are plagiarizing.**

    NOTE: This paragraph is also problematic because it changes the sense of several sentences (for example, "steam-driven companies" in sentence two misses the original's emphasis on factories

Here's an ACCEPTABLE paraphrase:

▶ Fall River, where the Borden family lived, was typical of northeastern industrial cities of the nineteenth century. Steam-powered production had shifted labor from agriculture to manufacturing, and as immigrants arrived in the US, they found work in these new factories. As a result, populations grew, and large urban areas arose. Fall River was one of these manufacturing and commercial centers (Williams 1).

Why is this passage acceptable?

▶ This is acceptable paraphrasing because the writer:

  ▶ accurately relays the information in the original

  ▶ uses her own words.

  ▶ lets her reader know the source of her information

Here's an example of quotation and paraphrase used together, which is also ACCEPTABLE:

- Fall River, where the Borden family lived, was typical of northeastern industrial cities of the nineteenth century. As steam-powered production shifted labor from agriculture to manufacturing, the demand for workers "transformed farm hands into industrial laborers," and created jobs for immigrants. In turn, growing populations increased the size of urban areas. Fall River was one of these hubs "which became the centers of production as well as of commerce and trade" (Williams 1).

Why is this passage acceptable?

- This is acceptable paraphrasing because the writer:
  - records the information in the original passage accurately.
  - gives credit for the ideas in this passage.
  - indicated which part is taken directly from her source by putting the passage in quotation marks and citing the page number.

- Note that if the writer had used these phrases or sentences in her own paper without putting quotation marks around them, she would be PLAGIARIZING. Using another person's phrases or sentences without putting quotation marks around them is considered plagiarism **EVEN IF THE WRITER CITES IN HER OWN TEXT THE SOURCE OF THE PHRASES OR SENTENCES SHE HAS QUOTED.**

Plagiarism and the World Wide Web

- The World Wide Web has become a more popular source of information for student papers, and many questions have arisen about how to avoid plagiarizing these sources. In most cases, the same rules apply as to a printed source: when a writer must refer to ideas or quote from a WWW site, she must cite that source.

Plagiarism and the World Wide Web

- If a writer wants to use visual information from a WWW site, many of the same rules apply. Copying visual information or graphics from a WWW site (or from a printed source) is very similar to quoting information, and the source of the visual information or graphic must be cited.

- These rules also apply to other uses of textual or visual information from WWW sites; for example, if a student is constructing a web page as a class project, and copies graphics or visual information from other sites, she must also provide information about the source of this information. In this case, it might be a good idea to obtain permission from the WWW site's owner before using the graphics.

Strategies for Avoiding Plagiarism

▶ 1. Put in **quotations** everything that comes directly from the text especially when taking notes.

▶ 2. **Paraphrase**, but be sure you are not just rearranging or replacing a few words.

Instead, read over what you want to paraphrase carefully; cover up the text with your hand, or close the text so you can't see any of it (and so aren't tempted to use the text as a "guide"). Write out the idea in your own words without peeking.

▶ 3. **Check your paraphrase** against the original text to be sure you have not accidentally used the same phrases or words, and that the information is accurate.

Terms You Need to Know (or What is Common Knowledge?)

- **Common knowledge**: facts that can be found in numerous places and are likely to be known by a lot of people.

- Example: John F. Kennedy was elected President of the United States in 1960.

- This is generally known information. **You do not need to document this fact.**

Common knowledge

▶ However, you must document facts that are not generally known and ideas that interpret facts.

▶ Example: According to the American Family Leave Coalition's new book, *Family Issues and Congress*, President Bush's relationship with Congress has hindered family leave legislation (6).

▶ The idea that "Bush's relationship with Congress has hindered family leave legislation" is not a fact but an*interpretation*; **consequently, you need to cite your source**

Quotation

- **Quotation:** using someone's words. When you quote, place the passage you are using in quotation marks, and document the source according to a standard documentation style.

- The following example uses the Modern Language Association's style:

- Example: According to Peter S. Pritchard in *USA Today*, "Public schools need reform but they're irreplaceable in teaching all the nation's young" (14).

Paraphrase

- **Paraphrase:** using someone's ideas, but putting them in your own words. This is probably the skill you will use most when incorporating sources into your writing. Although you use your own words to paraphrase, you must still acknowledge the source of the information.

Produced by Writing Tutorial Services, Indiana University, Bloomington, IN

- http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

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"WHAT CAN A LITERATURE REVIEW DO FOR ME?"

HOW TO RESEARCH, WRITE, AND SURVIVE A LITERATURE REVIEW.

Advanced research in humanities, natural sciences, social sciences, and engineering often demand a "literature review," whether or not there is a chapter or section of the thesis actually going by that name.

Sometimes, faculty advisors expect a researcher to incorporate the findings of a literature review into the body of a research essay, even if there is no section in the thesis given that name. Often, grant proposals (such as URP grant proposals) are expected to have formal literature reviews, even if the conventions of your field do not require a formal section entitled "Literature Review."

A Literature Review provides the meaningful context of your project within the universe of already existing research. "Meaningful context" can elevate your research from disconnected observations or number-crunching to the level of significance in the field of investigation.

The Literature Review sets the basis for your discussion or analysis or contemplation of implications or anticipation of further research.

You apply the principles of analysis in your field in order to evaluate whether previous research is valid; you determine if a previous study is incomplete, methodologically flawed, one-sided, or biased. This means that you do not simply list previous studies but that you assess them, noting their strengths and weaknesses.

Through the Literature Review you distinguish what has been done from what needs to be done.

You can synthesize previous perspectives and gain a new one; you can establish the context of the topic or problem, and you can set the basis for why the question is significant.

The Literature Review can help you (and the reader) understand the structure of the problem.

It can also place the research in a historical context, showing that the researcher is familiar with the most recent innovations in the field.

The significance of the Literature Review often mystifies inexperienced researchers, and its importance may be even more difficult to grasp when the particular line of research is unusual or not easily defined; and sometimes students become confused when their research seems patterned on similar projects or replicates previous work.

In many respects, the Literature Review presents the justification, the *raison d'etre* for your work. Why does this research need to be conducted? How is it different from other studies? Where does your research fit within current knowledge and, therefore, what do you expect to contribute?

Inexperienced researchers often approach this task in a mechanical, uninteresting way, when, in actuality, the Literature Review is an exciting, essential component of research.

There are certain aspects of writing a research-based essay that are often confused with the Literature Review. They may be important, and they are often introductory, but they do not constitute the Literature Review.

> A Literature Review is NOT an annotated bibliography – it is NOT an undifferentiated list of research resources each with a short descriptive paragraph.

> Similarly, it is not a literary survey, an overview of one author (the novels of Herman Melville) or a summary of a researcher's life and work (even if your work is biographical, you will also have secondary sources).

> Background information or explanations of important concepts may be essential but they do NOT constitute the essence of a Literature Review. For example, the definition of malaria may be important to a paper tracking malaria-bearing mosquitoes, but it is not the substantive part of a Literature Review.

> Finally, a Literature Review is NOT primarily an argument for the importance of what it is you are researching. It is crucial to explain what is at stake in your research, and the Literature Review may explore this aspect, but usually the Literature Review assumes that the urgency for undertaking the task has already been established in earlier, introductory parts of your research essay.

Disciplines regard Literature Reviews differently, and have various conventions for how they are researched and presented:

Natural sciences and engineering have fairly determined conventions for an essay reporting on research that includes a section explicitly labeled "Literature Review" or, sometimes, "Introduction" or "Background" followed by "Methodology," "Results," and "Discussion" or "Implications."

Social sciences have similar formats as natural sciences, although in some social sciences, particularly anthropology, there may be radical departures from the convention of an "explicit" Literature Review.

Philosophy, ethics, and often political science may have traditional social science formats, but they may have different ones or expanded or additional Literature Reviews that involve establishing basic premises and definitions of terms or models. For example, an ethics literature review will examine the different definitions of "justice" by different philosophers before establishing the author's framework.

Literary and historical studies no longer have a single convention. In history, an "explicit" Literature Review may be expected, but frequently it is not; in contemporary literary studies an "explicit" chapter or section is typically not expected at all. In both literary and historical studies, Literature Reviews do NOT examine "primary" sources, such as all of Melville's novels when writing about *Moby-Dick* or Richard Nixon's secret tapes when writing a history of Watergate. However, previous histories of Watergate and critical studies of *Moby-Dick* would be the focus of a Literature Review.

WHETHER OR NOT YOU WRITE A SECTION OR CHAPTER CALLED "LITERATURE REVIEW," YOU ARE USUALLY EXPECTED TO PRESENT YOUR RESEARCH WITH KNOWLEDGE OF EXISTING RESEARCH.

YOU ARE NEVER EXPECTED TO BE NAÏVE. However, depending on the scope of your research, your knowledge of the field may not be expected to be total.

RHETORICAL PATTERNS OF LITERATURE REVIEWS

The conventions in natural sciences and many social sciences call for an **"explicit" or "overt"** Literature Review. A specific chapter or section relates the history of previous research with a rationale for the work currently undertaken clearly in mind.

Literary and historical studies often call for an **"implicit" or "covert"** Literature Review. This means that a thorough knowledge of the critical or historical literature is assumed and works are referenced in the body of the essay as part of the process of discussion or analysis. The author raises another critic's or historian's work only when it is necessary to make a point or identify a gap in the field.

In most cases, a Literature Review does NOT include every bit of research done on the topic, but the researcher selects only the most significant texts. This already implies a process of evaluation and prioritization even before the Literature Review is written. The guidance of faculty or the researcher's own experience helps to determine the quality of sources. Or, if a source is referenced regularly by other researchers, it can be assumed to be valid and valuable and therefore must be addressed. You need to work with advisors, librarians, and others in the field to make sure that you review all the literature necessary for your work.

A Literature Review is a piece of discursive writing that argues some position or point of view about research (notably, why your research needs to be done). In order to write it, you need to know what your thesis, problem or research question the Literature Review will help to define or clarify. Often, in order to decide upon a topic or question to purse, you will review the literature in the field, but by the time you actually write the Literature Review, you are clear about your topic.

You need to determine the scope of your literature review and what types of literature you are reviewing. Often, this is determined by the nature of your study.

Literature Reviews usually follow a few key rhetorical patterns. Often these patterns are employed in combinations. Here are a few examples of rhetorical patterns, described in informal terms:

> **ROAD MAP:** The researcher traces the history of knowledge in this field, one achievement after another, one study building on the work of the previous one, all of which points to one destination which happens to be the current work.

> **DÉJÀ VU ALL OVER AGAIN:** The researcher identifies current knowledge, even existing methodology, but argues for some kind of replication for verification or variation such as a different sample

population. Replication is essential for natural and social sciences, so this is a frequent pattern.

SWISS CHEESE: The researcher presents a picture of current knowledge, identifying gaps or holes in the field, and argues why the current research plugs up one of the holes.

BATTLEBOTS: The researcher identifies various lines of argument, debates, and trends in the field, then situates the current research within that context and stakes out this study's position. This is common within literary and historical studies, but it also appears in social and natural sciences and philosophical research.

GUILT BY ASSOCIATION: Often, there is no research directly on the subject. In this case, the researcher has to construct a context based on inference using similar or related research. This situation is often felt as having too little material – but in fact the researcher unearths inferential sources.

EYEBALL SWITCH: In this pattern, much of the field or library material remains the same, but a new analytical or theoretical framework or approach changes the way the research is conducted. Consequently, the discussion focuses on the theory involved and research that may have been done using that perspective. This is often used in literary studies.

HOW-TO BOOK: In some circumstance, you may be required to write a Literature Review of the methodology you employ – a somewhat different mode than the context for your research. This is especially true if your methodology is unusual or a hybrid or a combination of different techniques. If this is the case, there is an *additional, separate* Literature Review incorporated within whatever methodology discussion you present.

RESEARCHING THE LITERATURE REVIEW

Unless you are so well versed in the field that you know all the current work, you will have to do some detective work in the library, on the web, or through other media to find the material, to understand it, and to determine the history of your line of investigation.

The following research tips can be summarized as **"COLLECT, SCAN, READ."**

> **COLLECT** all your material but don't read any of it in depth (unless your faculty mentor or your own knowledge of the field makes it clear that certain texts are "obviously" essential). One technique for "harvesting" sources is to identify the most recent texts in the field and examine its footnotes and bibliography. You can trace a historical "map" of research by examining other people's Literature Reviews.
>
> **SCAN** your material (such as reading the first and last chapters, skimming articles, reading only the abstracts) to identify what you think might be important. Do not toss out what you do not think is important (you may be wrong or you might go in a new direction later), but put it aside for the moment. Keep a research log with bibliographic information and short notes identifying the material and evaluating its pertinence to your project.
>
> **READ** prioritized material and determine their order of importance. There are often "meta-analyses" which are not studies themselves but surveys of studies, and these can be very useful to you for identifying the trends and debates within the field. At this point, after you have gained a sense of priorities, start taking notes.

There are a number of note-taking systems, from index cards to computer programs. Determine which is the most comfortable for you so that you can readily rearrange your notes to follow an order of quoted passages or a sequence of facts or a progression of logic when writing.

You should determine which documentation system is appropriate for the field of research before you complete your Literature Review.

Social science and natural sciences typically use the parenthetical APA, Political Science or related systems that privilege the author and date of study (Smith, 1987).

Literary studies most often use the parenthetical MLA style which privileges the author and page (Obenzinger 295).

Historical and philosophical studies typically use the Chicago Style or variants (such as Turabian) which employ footnotes or endnotes with bibliographic information and page numbers.

If you are working on an honors thesis, other advanced research project, or grant proposal, you are welcome to make an appointment

**with me or my associate for editorial consultation at different stages
concerning your Literature Review. Tutors are also available at the
Stanford Writing Center in Margaret Jacks Hall.**

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