



Image by storyset on freep

The Crafts of Research

WEEK 2: PROBLEM STATEMENTS AND IRBS

INSTRUCTOR: YVONNE FARAH



Outline

- Problem Statements
- IRBs
- Reminders



The game of questions!



Image by storyset on Freepik

Finding a good research problem



Image by Freepik

- *Ask for help:*
 - Who would want an answer to your question?
 - What new questions might an answer bring up?
- *Look for problems as you read:*
 - Contradictions, inconsistencies, complex explanations?
 - Future directions
- *Look at your own conclusions:*
 - Have you answered a question you have not yet asked?
 - Have you solved a problem you have not yet posed?



Identifying Significance of Questions

- *So* what? Why should people care? Why is your problem important?
- What will be lost if you *don't* answer your question?
- How will *not* answering your question keep us from understanding something else better than we do?



Problem Statement Case Study

Identify the general topic: As **Artificial Intelligence (AI)** technologies continue to become **increasingly integrated into interactive systems**, Identify the need there is a growing need to understand how users **perceive and trust AI driven interfaces**. Identify the problem While AI can enhance user experiences by automating tasks, adapting to user preferences and providing personalized recommendations, **it presents challenges related to transparency, reliability and user control**.



Image by pch.vector on Freepik



Identifying Question/Problem Significance

Step 1: Name Your Topic

Step 2: Add an Indirect Question

Step 3: Answer So What? By Motivating Your Question



Image storyset on freepik



Step 1: Name your topic

A. I am studying/working on -----

Fill in the blank with your topic and verb derived nouns (e.g., causes, disappearances, beliefs, influence, reasoning, etc.) when applicable

Identify the general topic: As **Artificial Intelligence (AI)** technologies continue to become **increasingly integrated into interactive systems**, Identify the need there is a growing need to understand how users **perceive and trust AI driven interfaces**. Identify the problem While AI can enhance user experiences by automating tasks, adapting to user preferences and providing personalized recommendations, **it presents challenges related to transparency, reliability and user control.**

A. I am studying people interactions with AI driven interfaces



Step 2: Add an indirect question

B. Because I want to find out who/what/when/where/whether/why/which/how _____

Indicates what you do not know or understand about the topic and why you are pursuing the topic

Identify the general topic: As **Artificial Intelligence (AI)** technologies continue to become **increasingly integrated into interactive systems**, Identify the need there is a growing need to understand how users **perceive and trust AI driven interfaces**. Identify the problem While AI can enhance user experiences by automating tasks, adapting to user preferences and providing personalized recommendations, **it presents challenges related to transparency, reliability and user control.**

B. Because I want to find out what factors affect people's trust in different AI recommendations



Step 3: Answer So What?

C. in order to help my reader understand how/why/whether _____

This is the portion of the sentence that your readers should care about

Identify the general topic: As **Artificial Intelligence (AI)** technologies continue to become **increasingly integrated into interactive systems**, Identify the need there is a growing need to understand how users **perceive and trust AI driven interfaces**. Identify the problem While AI can enhance user experiences by automating tasks, adapting to user preferences and providing personalized recommendations, **it presents challenges related to transparency, reliability and user control.**

C. In order to help my readers identify reliable AI recommendations



Activity 1: Mini-Problem Statement

Work with your research team for the next 5-10 minutes in creating the following statement:

- A. Topic:** I am studying/working on _____...
- B. Question:** ...because I want to find out what/why/how (etc.) _____...
- C. Significance:** ...in order to help my reader understand _____.



Practical Problems & Research Problems

Practical Problems

- Caused by a condition in the world that makes us unhappy
- Costs us
- **Solved by doing something** that eliminates the cause of (or ameliorates) the problem/costs

Conceptual Problems

- Arises when we do not understand something about the world
- **Solved by by answering a question** that helps us understand the world better



Adding practical application to your problem statement

Work with your research team for the next 5-10 minutes in creating the following statement:

- A. Topic:** I am studying/working on _____
- B. Question:** ...because I want to find out what/why/how (etc.) _____
- C. Significance:** ...in order to help my reader understand _____
- D. Potential Practical Application:**so that readers might _____



Problem Area Paragraph Milestone

- Components to generally cover:
 - Introduces reader to space/scope of the problem you are addressing (i.e., Topic)
 - Why are you doing this research? (i.e., Question)
 - Why should the reader care (i.e., Significance)
 - What the solution could be used for (i.e., Application)
- Milestone completion dates/weeks will be different for all groups



Institutional Review Boards

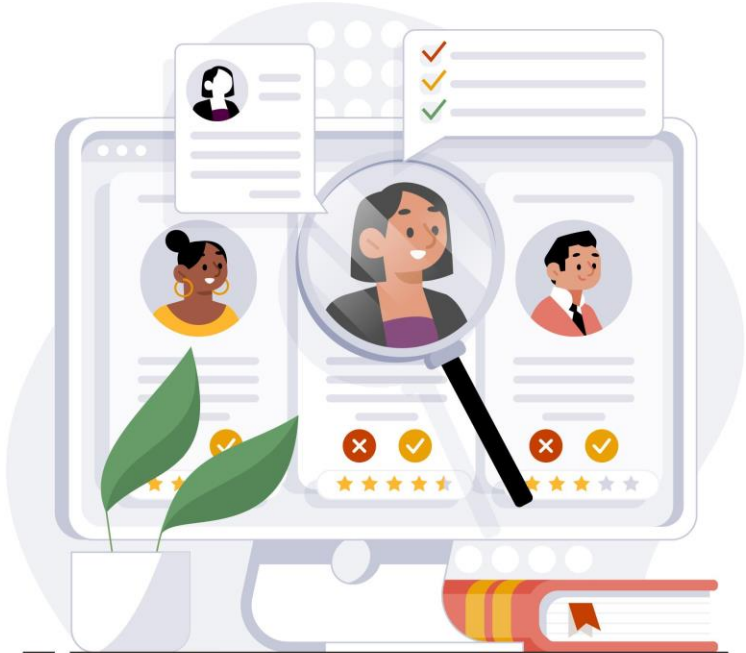


Image by pikisuperstar on Freepik



What is the IRB and what does it do?

- Institutional Review Board
- Reviews human subjects research projects
- Ensures protection of all people involved in the research
 - Participants, researchers, primary investigators
- Can take months to receive full reviews and approval
 - Can't work on any of the research prior to IRB approval



Primary Goals of the IRB

1. Protection of the **rights and welfare of human subjects** who voluntarily give their time, energy, and personal information to better society through research
2. Maintain **institutional compliance** with federal requirements



IRB Considerations During Review

1. Risk to subjects minimized
2. Risk reasonable in relation to benefits
3. Subject selection equitable
4. Maintenance of confidentiality and subject privacy
5. Informed consent obtained
6. Informed consent documented
7. Additional safeguards to protect the vulnerable
8. Adequate provisions for monitoring data collection



Types of IRB Reviews

1. Exempt
2. Expedited Non-Exempt
3. Full-Board Non-Exempt



Exempt IRB Reviews

- Certain types of projects deemed “exempt” from most regulatory requirements
- Shorter IRB form
- Quicker (usually) review process
- Researchers are expected to honor basic ethical considerations
 - i.e., voluntary informed consent, protecting confidentiality, etc.



Exempt IRB Reviews

Exemption allowable if all of the following conditions are met:

- A. Research presents little to no risk of harm to participants
- B. Confidentiality of participants will be protected when results are disseminated
- C. The research does not include prisoners
- D. All research procedure fit into one or more of six regulatory exemptions



Common Exempt IRB Examples

Anonymous survey of adults

Interviews or focus groups w/ adults using non-sensitive or overly personal topics

Research in established/accepted educational settings involving normal educational practice

Research using de-identified existing data

Taste tests of food products of wholesome foods w/out additives



Non-Exempt IRB Reviews: Expedited

- Review and approval by an IRB chair and Co-Chair/Vice Chair

Allowable if all of the following conditions are met:

- A. Minimal risk (commensurate with routine physical/psychological exams or daily life)
- B. All research procedures fit into one or more of nine regulatory categories
- C. Confidentiality of participants protected when results are disseminated
- D. The Chair(s) have the appropriate disciplinary expertise to evaluate the research



Common Expedited IRB Examples

Many social/behavioral research methods not involving ethical issues

Use of private and identifiable existing data

Use of non-invasive, FDA cleared sensors, or non-invasive specimen collection

Mild to moderate exercise, height/weight measures

Blood draws under certain amounts for certain situations



Non-Exempt IRB Reviews: Full-Board Review

- Reviewed by the full board during a meeting
- Reviews the following:
 - A. Research projects not eligible for *exempt* or *expedited* review
 - B. Research projects that the Chair(s), at their discretion, refer for board review
 - C. Adverse events, unanticipated problems, cases of noncompliance, and similar issues
 - D. IRB policies



Common Full-Board Review IRB Examples

Research involving
vulnerable populations

Collection of highly
sensitive or personal
information

Invasive or strenuous
procedures, x-rays, or
some blood draws

Research on drugs,
food
additives/products,
dietary supplements,
or medical devices



Questions



Image by storyset on Freepik

