Lecture 26
Empirical Research Report

Lecture Outline:
- Superstructure for Empirical Research Reports
- Conclusions
- Recommendations
- An important note about Headings
- Planning Guide
- Sample Research Report
- Typical Writing Situations

You will be able to use the superstructure for empirical research reports most successfully if you understand the purpose of research discussed in them. When you are writing about empirical research, you will be writing to people who will make decisions based on the results of your reports.

Typical Writing Situations:
For example, Ayesha's experiment will be used by engineers who design engines for employees. The results of Anam's survey will be used by state agency in charge of outdoor recreation as it decides what sort of facilities it must provide to meet the needs of older citizens.

A smaller amount of empirical research has a different purpose: to extend general human knowledge. The researchers set out to learn how fish remember, what the molten core of earth is like, etc. The research is carried out for the sake of humanity and is published in Science Journals etc.

In some situations these two aims of research overlap. Some organizations sponsor basic research, usually in the hope that what is learned can later be turned into practical use. Likewise some practical research turns up results that are of interest to those who desire to learn more about the world in general.

The questions Readers ask Most:
Whether it aims to support practical decisions, extend human knowledge, or achieve some combination of the two purposes, almost all empirical research is customarily reported in the same superstructure. That's because readers of all types have the same seven general questions about it.

The seven Questions:
Why is the research important to us?
Readers concerned with solving specific practical problems want to know what problems your research will help address. Readers concerned with extending human knowledge want to know how you think your research contributes to what humans know.

The seven Questions:
What were you trying to find out?
A key part of an empirical research project is the careful formulation of the research questions that the project will try to answer. Readers want to know what those questions are so they can determine whether they are significant questions.

The seven Questions:
Was your research method sound?
Your method has to be appropriate to your research and it has to be intellectually sound.
If the research method is not appropriate or intellectually sound, your readers will not place any faith in your results, conclusions and recommendations you based upon.

The seven Questions:
What results did your research produce?
Naturally, your readers will want to find out what results you obtained.
How do you interpret those results?
Your readers will want to interpret those results in ways that are meaningful to them.

The seven Questions:
What is the significance of those results?
What answers do those results imply for your research questions, and how do your results relate to the problems research was to help solve or the area of knowledge your research set out to expand.

The seven Questions:
What do you think we should do?
Readers concerned with practical problems want to know what you advise them to do.
Readers concerned with extending human knowledge want to know what you think your results imply for future research.

Superstructure for Empirical research Reports:
To answer the readers typical questions about empirical research reports, writers use a substructure that has the following elements.

- Introduction
- Objectives of research
- Methods Results
- Discussion
- Conclusions
- Recommendation

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Report Element	Reader's Questions
Introduction	Why is your research important to us?
Objectives of Research	What were you trying to find out?
Method	Was your research method sound?
Results	What results did your research produce?
Discussion	How do you interpret your research?
Conclusion	What is the significance of those results?
Recommendation	What do you think we should do?

Introduction:
Reader's Questions Report Element
In the introduction to an empirical report, you should seek to answer the readers' question, "Why is the research important to us?"

Typically, writers answer this question in two steps: they announce the topic of their research and then explain the importance of the topic to their readers.

Announcing the topic:
You can often apply the topic of your research simply by including that topic as the key phrase in the opening sentence of your report. For example consider the first sentence of a report on the satellite communication system on the next slide.

Example:
For the past eighteen months, the satellite Products Laboratory has been a developing a system that will permit companies with large, nationwide fleets of trucks to communicate directly with their drivers at any time through a satellite link.

Topic of the Report
Example:
Here is the first sentence from a report on the way that people develop friendly relations.
Social psychologists know very little about the way real friendships develop in their natural settings.

Explaining the importance of research:
To explain the importance of research to your readers, you can use either or both of the following methods. State the relevance of your research to your organization's goals. Review the previously published literature on the subject.

Relevance to Organization Goals:
In reports written to readers in organization, (whether your own or a client's), you can explain the relevance of your research by relating it to some organizational goal or problem. Sometimes the importance of research will be so obvious to your readers that merely naming your topic will be sufficient.

Relevance to Organization Goals:
At other times, you will need to discuss at length the relevance of your research to the organization. In the first paragraph of the satellite report, for instance, the writers mention the potential market for the satellite communication system they are developing.

Literature Reviews:
First, present the main pieces of knowledge communicated in the literature. Then, identify some significant gap in this knowledge— the very gap your own research will fill. In this way, you establish the special contribution that your research will make.

A second way to establish the importance of your research is to review the existing knowledge on your subject. Writers usually do this by reviewing the previously published literature. Generally, you can arrange a literature review in two parts.

Literature Reviews:
A great deal of research in social psychology has focused on variables influencing an individual's attraction to another at an initial encounter, usually in laboratory settings (Bergscheid and Walster, 1978; Bryne, 1971; Huston and Levinger, 1978), yet very little data exists on the processes by which individuals in the real world move beyond initial attraction to develop a friendship; even less is known about the way developing friendships are maintained and how they evolve over time (Huston and Burgess, 1979; Levinger, 1980). The writer tells what is known on his topic The writer identifies the gaps in knowledge that his research will fill.

The writer continues this discussion of previous research for three paragraphs. Each follows the same pattern: it identifies an area of research, tells what is known about that area, and identifies gaps in the knowledge gaps that will be filled by the research that the writer has conducted.

Literature Reviews:

These paragraphs serve an important additional function also performed by many literature reviews. They introduce the established facts and theories that are relevant to the writer's work and necessary to the understanding of the report.

Literature Reviews:

Writers almost always include literature reviews in the reports they write for professional journals. In contrast, they often omit reviews when writing to readers inside an organization. That's because such reviews are often unnecessary when addressing organizational readers.

Organizational readers judge the importance of a report in terms of its relevance to the organization's goals and problems, not in terms of its relation to the general pool of human knowledge. For example, the typical readers of the truck-and-satellite communication report were interested in the report because they wanted to learn how well their company's system would work.

To them, a general survey of the literature on satellite communication would have seemed irrelevant– and perhaps even annoying. A second reason that writers often omit literature reviews when addressing readers in organizations is that such reviews rarely help such readers understand the reports.

That's because the research projects undertaken within organizations usually focus so sharply on a particular, local question that published literature on the subject is beside the point. For example, a review of previously published literature on satellite communications would not have helped readers understand the truck-and-satellite report.

Sometimes, of course, literature reviews do appear in reports written to organizational readers. Often, they say something like this: "In a published article, one of our competitors claims to have saved large amounts of money by trying a new technique. The purpose of the research described in this report is to determine whether or not we could enjoy similar results."

Of course, the final standard for judging whether you should include a literature review in your report is your understanding of your purpose and readers. In some way or another, however, the introduction to all your empirical research reports should answer your readers' question, "Why is this research important to us?"

Objectives of the Research:

Every empirical research project has carefully constructed objectives. These objectives define the focus of your project, influence the choice of research method, and shape the way you interpret your results. Thus, readers of empirical research reports want and need to know what the objectives are.

The following example from the satellite report shows one way you can tell your readers about your objectives:

In particular, we wanted to test whether we could achieve accurate data transmissions and good-quality voice transmissions in the variety of terrains typically encountered in long-haul trucking. We wanted also to see what factors might affect the quality of transmissions.

When reporting on research that involves the use of statistics, you can usually state your objectives by stating the hypotheses you tested. Where appropriate, you can explain these hypotheses in terms of existing theory, again citing previous publications on the subject.

The following passage shows how the writer who studied friendship explains some of his hypotheses. Notice how the author begins with a statement of the overall goal of the research. Consider the example on the next slide.

The goal of the study was to identify characteristic behavioral and attitudinal changes that occurred within interpersonal relationships as they progressed from initial acquaintance to close friendship. With regard to relationships benefits and costs, it was predicted that both benefits and costs would increase as the friendship developed.

The ratings of both the costs and benefits would be positively correlated with the ratings of friendship intensity. In addition the types of benefits listed by the subjects were expected to change as the friendships developed.

Method:

When reading the reports of your empirical research, people will look for precise details concerning your method. Those details serve three purposes. They let the readers assess the soundness of your research design and appropriateness for problems you are investigating.

Method:

Second, the details enable your readers to determine the limitations that your method might place upon the conclusions you draw. Third, the description your method provides information that will help your readers repeat your experiment if they wish to verify your results or conduct similar research of their own.

Method:

The kind of information you should provide about your method depends upon the nature of your research

Example:

At the beginning of their first term at the university, college freshmen selected two individuals whom they had just met and completed a series of questioners regarding their relationships with those two individuals at 3-week intervals through the school term.

Method:

In the remaining of the paragraph, the writers explain the questionnaires asked the freshmen to tell about such things as their attitudes towards each of the other two individuals. However, the paragraph is a small amount of the researcher's account of his method, actual research being a document of 1200 words.

Method:

The writers of the satellite report likewise provided detailed information about their procedures. He provides three paragraphs and two tables explaining their equipment, two paragraphs and one map describing the eleven stage region covered by the trucks.

Method:

How can you decide which method to include? The most obvious way is to follow the general reporting practices of your fields. You can you check the scope of your research in the ways described in the next slide.

Method:

List every aspect of your procedure that you made a decision about when planning your research. Identify every aspect of your research what your readers might ask about. Ask yourself what aspects of your procedure might limit the conclusions you can draw from your results. Identify every procedure that other researchers would need to understand in order to design a similar study.

Results:

The results of empirical research are the data you obtain. Although your results are the heart of your empirical research project, they may take up a very small portion of it. Generally, results are presented in one of two ways:

- Tables
- Graphs

The satellite report uses two tables. The report on friendship uses four tables and eleven graphs.

Sentences: When placed in sentences, results are often woven into a discussion that combines data and interpretation.

Discussion:

Sometimes writers briefly present all their results in one section and then discuss them in a separate section. Sometimes they combine the two in a single, integrated section. Whichever method you use, your discussion mush link your interpretative comments with the specific results you are interpreting.

Conclusions:

Besides interpreting the results of your search, you need to explain what your results mean to in terms of original research questions and the general problem you set our to investigate. Your explanations of these matters are conclusions.

Recommendations:

The readers of some empirical research reports want to know what the writers think should be done. This is especially true in cases where the research is directed at solving a practical problem. Consequently research reports include a section on recommendations.