

Research Article¹

Purpose: The overall purpose of research articles (RA) is to contribute new knowledge to a particular field (Brett).

Form: The most common form for research articles in the sciences and social sciences follows the IMRD model (Introduction, Method, Results, Discussion). Each section has a separate purpose and form that it contributes to the whole.

Introduction²

Purpose: to provide some general orientation to the topic and to carve out a space for the research presented in the article.

Form: Swales identifies three basic rhetorical moves that may be accomplished by a variety of steps (141). Samraj reminds us that, although Swales lists background information as part of the first move, it might be included in any of the moves.

- Move 1: Establishing a territory
 - Step 1: claiming centrality (and/or)
 - Step 2: Making topic generalization(s) (and/or)
 - Step 3: Reviewing items of previous research
- Move 2: Establishing a niche
 - Step 1A: counter-claiming (or)
 - Step 1B: Indicating a gap (or)
 - Step 1C: Question raising (or)
 - Step 1D: Continuing a tradition
- Move 3: Occupying the niche
 - Step 1A: Outlining purposes (or)
 - Step 1B: Announcing present research
 - Step 2: Announcing principle findings
 - Step 3: Indicating RA structure (not always present)

Methods

Purpose: To provide information about the collection and analysis of data. This information demonstrates the quality of the “science” involved and, in theory at least, allows for the replicability of the experiment (in reality, it cannot include all of the details involved in methodology).

Form: For most scientific research articles, methods includes two major tasks: to describe how the data were obtained and how the data were analyzed. Often, this entails a description of the materials used and the methods involved in the study. According to Brett, social science research articles may include an additional task: to explain how certain intangible factors, such as “well-being” were measured in order to generate quantitative data.

Results³

Purpose: Present “objective” data from the study and make new knowledge claims (Brett).

Form: Although the form here is less formalized than that of introductions, there are several common moves, though not all of them will be present in any given article. The only mandatory move (Brett, Swales) is the factual statement of the results. Brett groups typical moves around three kinds of communicative categories: metatextual (text about text), presentation (moves that objectively report, present, or highlight results), and comment (which interprets, comments on, or states opinions about the results).

- Metatextual categories
 - Pointers (statements that indicate which data is being discussed—i.e. “table one shows”)

¹ Adapted from John M. Swales, *Genre Analysis: English in Academic and Research Settings*. Cambridge: Cambridge UP, 1990; B. Samraj, “Introductions in Research Articles: Variations Across Disciplines.” *English for Specific Purposes* 21 (2002): 1-17; Paul Brett, “A Genre Analysis of the Results Section of Sociology Articles.” *English for Specific Purposes* 13.1 (1994): 47-59.

² Swales’ CARS model (Create a Research Space) is the most often cited model for introductions.

³ Swales points out that results and discussion are not clear demarcations, as they are sometimes blended.

- Structure of section
- Presentation categories
 - Procedural (comments that indicate how and why data were produced)
 - Hypothesis restated (may also generate further hypotheses from findings)
 - Statement of findings/results
 - Comparison (between subjects in the study)
 - Time-related change (indicates trends or changes in the subjects over time)
 - Relationship between variables
 - Substantiation of finding
 - Non-validation of finding (indicates data that doesn't support finding)
- Comment categories
 - Explanation of findings
 - Comparison of findings with literature (may indicate the ways in which they are the same different, or neither the same nor different)
 - Evaluation of findings regarding the Hypothesis (whether they confirm the hypothesis or not)
 - Further question(s) raised by findings
 - Implications of finding
 - Summarising

Discussions

Purpose: To address any loose ends and to bring the article to conclusion. This section, as Penrose and Katz indicate, explains how the initial research question has been answered (at least in part) by the research presented in the article and suggests how this information represents a legitimate contribution to the field (in other words, this section may situate the results in relation to the results of other researchers).⁴

Form: This is often the shortest section in social science articles (Brett); it generally includes a summary of the article and comments on the implications for future research. Swales suggests eight common moves that might appear in discussions:⁵

- Background information (may include repetition of main points, reminders, etc.)
- Statement of results
- (Un)expected outcome (may be rare)
- Reference to previous research
- Explanation (reasons for a particular result)
- Exemplification
- Deduction and hypothesis (making a claim about the generalizability of some or all of the results)
- Recommendations for further research (although this move may be decreasing, as researchers are sometimes reluctant to give an advantage to others).

⁴ Ann M. Penrose, and Steven B. Katz. *Writing in the Sciences: Exploring Conventions of Scientific Discourse*. Boston: Bedford/St. Martins, 1998.

⁵ As can be seen by comparison with the “results” section, there may be considerable overlap between results and discussion, reinforcing Swales’ claim that the distinction between the two sections is often unclear.

Scientific Research Proposal⁶

Purpose:

According to Penrose and Katz, the primary persuasive goals of a scientific research report are: “To convince your scientific audience that the problem you propose to investigate is important and worth exploring” and “to convince them you will explore the problem in a sensible way” (117). More specifically, proposals (especially grant proposals) may function to “persuade proposal reviewers and grant agency officials to fund the proposed research” (Connor and Mauranen 48). In addition, proposals serve to demonstrate that the researcher is familiar with relevant research in the field and is suitably qualified to carry out the project proposed.

Form:

The format for proposals varies, often depending on the particular institution or agency for which the proposal is written. However, most proposals contain most, if not all, of the following elements:

- **Introduction.** The introduction provides background information for the research. In particular, it should establish the territory (real world or research) in which the research is placed (Connor and Mauranen).
- **Statement of Problem.** The problem statement ought to clearly identify a gap or problem in the research. It should be presented within a particular context, and may include an explanation of the conceptual or theoretical framework involved (Pajares). The problem statement may be a separate section, or it may be included in the introduction.
- **Purpose.** The purpose should indicate the goals and the objectives of the research. It may foreshadow the hypothesis to be tested or the questions raised. It should also include a rationale for the study (Pajares).
- **Review of Literature.** The review of literature situates the project in the field by relating it to previous research (Connor and Mauranen). It should indicate how the study in question will refine, revise, or extend what is already known (Pajares). Its general function is to establish both what is known about a field and the need for this particular research; it also exhibits the writer’s familiarity with the field (Pajares).
- **Questions and Hypotheses.** This section poses the particular questions the study aims to answer or the hypotheses to be tested. It may also anticipate the answers to these questions or the results of the experiment(s).
- **Methodology.** This section is essential to most good research proposals—it includes a description of the general means through which the goals of the study will be achieved: methods, materials, procedures, tasks, etc. (Connor and Mauranen). It may also need to include a rationale for the particular methods used.
- **Significance.** This section elaborates on the contributions the study will make to existing knowledge (Pajares). It may also explain why the objectives or topic of the study are particularly urgent or important, and it may explain the usefulness or benefits of the study both to the outside world and the research community (Connor and Mauranen).
- **Qualifications.** All research proposals should demonstrate that the individual(s) undertaking the study is qualified to do so, although this demonstration may be implicit (through familiarity with methods and previous research) rather than explicit. Some proposals, however, require an explicit statement of the researcher’s experience and qualifications to conduct the described research.
- **Works cited.** A list of sources cited in the proposal. This list may also include reference works that will be consulted in the project itself.

Other elements might include an abstract, a timeline for the project, a proposed budget for the project, and/or explanation of the project’s limitations.

⁶ Adapted from Ulla Connor and Anna Mauranen. “Linguistic Analysis of Grant Proposals: European Union Research Grants.” *English for Specific Purposes* 18.1 (1999): 47-62; Ann M. Penrose, and Steven B. Katz. *Writing in the Sciences: Exploring Conventions of Scientific Discourse*. Boston: Bedford/St. Martins, 1998; and Frank Pajares, “Elements of a Proposal.” Accessed 28 Mar. 2005 <<http://www.emory.edu/EDUCATION/mfp/proposal.html>> .

Literature Review⁷

PURPOSE: Literature reviews need to provide background information about a topic, demonstrate the importance of the topic, and “carve out a space” for future research by indicating the weaknesses and gaps in existing research. To do so, they need to provide some mixture of summary and evaluation. Literature reviews are more than just lists of previous studies; they are also (implicit) arguments about a particular body of research.

ORGANIZATIONAL PATTERNS⁸:

Topical

- *Characteristics:* This approach breaks the field into a number of subfields, subject areas, or approaches, and discusses them one by one, sometimes with critiques of each. (Most common pattern).
- *Typical language:* Three important areas of this field have received attention: A, B, and C. A has been approached from two perspectives The most important developments in terms of B have been C has also been an important area of study in this field.

Distant to Close

- *Characteristics.* This is a variation of organization by approach; studies are organized in terms of their relevance to the current study. This approach starts by describing studies with general similarities and ends with studies most relevant to the specific topic.
- *Typical language.* Method/model M (slightly similar to current research) addresses Drawing upon method/model N (more similar to current research) can help This study applies the procedure used in method/O (most similar to current research) to

Debate

- *Characteristics.* Also an organization by approach, with a chronological element. This organization emphasizes various strands of research in which proponents of various models openly criticize one another.
- *Typical language.* There have been two (three, four, etc.) distinct approaches to this problem. The first model posits The second model argues that the first model is wrong for three reasons. Instead, the second model claims

Chronological

- *Characteristics.* This approach lists studies in terms of chronological development; it is most useful when a field shows clear development over time.
- *Typical language.* This subject was first studied by X, who found In (date), Y modified/extended/contradicted X’s work by Today, research by Z represents the current state of the field.

Seminal Study

- *Characteristics.* Begins with a detailed description of one extremely important study. Later work is organized following another pattern (chronological, topical, etc.).
- *Typical language.* The most important research on this topic was the study by X in (date). Following X’s study, research fell into two camps (extended X’s work, etc.).

⁷ Adapted from “Strategies for Writing Literature Reviews,” a handout provided by the Graduate Communication Enhancement Program/Center for Excellence in Writing at Penn State.

⁸ Swales and Lindemann, “Teaching the Literature Review to International Graduate Students” (in Johns, ed. *Genre in the Classroom*) suggest that literature reviews (LR) can be hard to teach because they aren’t as susceptible to the kind of “move” analysis possible in research articles. As Swales and Lindemann’s class assignment demonstrates, organizational patterns for literature reviews are not limited to those described here and are often field specific.

Thesis/Dissertation

Purpose/Function:

Dana Britt Lundell and Richard Beach suggest that one of the difficulties students have with dissertations is their multiple functions.⁹ Because dissertations are written for a variety of audiences (advisor, committee, graduate school, potential job market audience), and because they are increasingly being used as gatekeepers in a competitive academic market, thesis/dissertation purposes may vary from a learning tool (meant to initiate students into a particular discipline), a tool for evaluation of competence and a resource used in hiring. Dissertations function in part to display disciplinary and help (re)produce disciplinary communities.

Form:¹⁰

Although dissertations may be similar in form to some forms of academic research writing, such as research articles, they are vastly different in scale. As such, they often include a higher degree of metadiscourse features that provide guidance through the text. In addition, they “vary in terms of their purpose, readership, the kind of skills and knowledge they are required to demonstrate and ‘display’ and the kinds of requirements they need to meet” (Paltridge 126). Paltridge provides some common forms; however, these forms seem more common in the social sciences and hard sciences rather than humanities.

<p>Traditional: simple Introduction Literature Review Materials and methods Results Discussion Conclusions</p>	<p>Topic-based Introduction Topic 1 Topic 2 Topic 3, etc. Conclusion</p>
<p>Traditional: Complex Introduction Background to the study and review of the literature (Background theory) (General methods) Study 1 Introduction Methods Results Discussion and conclusions Study 2 Introduction Methods Results Discussion and conclusions Study 3 Introduction Methods Results Discussion and conclusions Discussion Conclusions</p>	<p>Compilation of research articles Introduction Background to the study Research article 1 Introduction Literature review Materials and methods Results Discussion Conclusion Research article 2, etc. Introduction Literature review Materials and methods Results Discussion Conclusion Discussion Conclusions</p>

⁹ “Dissertation Writer’s Negotiation with Competing Activity Systems.” In Charles Bazerman, David R. Russell, eds., *Writing Selves, Writing Societies: Research from Activity Perspectives*. Fort Collins, CO: WAC Clearinghouse, 2003. 7 Feb. 2005. <http://wac.colostate.edu/books/selves%5Fsocieties/lundell_beach/lundell_beach.pdf>.

¹⁰ Adapted from Brian Paltridge, “Thesis and Dissertation Writing: An Examination of Published Advice and Actual Practice.” *English for Specific Purposes* 21 (2002): 125-43.

Abstracts¹¹

Purpose/Function:

Huckin identifies four uses for abstracts: “stand-alone *mini-texts*”; “*screening devices*” that allow the reader to decide whether or not to read the article; “*previews*”, interpretive frames that guide reading; and “*aids to indexing*” by professional indexers for database services (93).

Form:

Abstracts are typically composed of four parts (or rhetorical moves): statement of purpose, description of methods, results, and discussion. (However, Huckin indicates that in his study of biomedical abstracts, many abstracts omitted the purpose). He offers the following suggestions for authors and students:

1. Title should include the major concepts in the article
2. The methodology should be described in such a way that the reader can infer the purpose (i.e. to do X, we . . .)
3. Emphasize results and conclusion
4. Statement of conclusions should emphasize the most important results
5. Past-tense verbs should be used to describe the results of the study; present-tense verbs should be used to state general conclusions.

¹¹ Information adapted from Thomas Huckin, “Abstracting from Abstracts.” *Academic Writing in Context: Implications and Applications*. Ed. Martin Hewings. Birmingham, UK: U of Birmingham P, 2001. 93-103.