

Writing an Abstract for Your Research Paper

Definition and Purpose of Abstracts

An abstract is a short summary of your (published or unpublished) research paper, usually about a paragraph (c. 6-7 sentences, 150-250 words) long. A well-written abstract serves multiple purposes:

- an abstract lets readers get the gist or essence of your paper or article quickly, in order to decide whether to read the full paper;
- an abstract prepares readers to follow the detailed information, analyses, and arguments in your full paper;
- and, later, an abstract helps readers remember key points from your paper.

It's also worth remembering that search engines and bibliographic databases use abstracts, as well as the title, to identify key terms for indexing your published paper. So what you include in your abstract and in your title are crucial for helping other researchers find your paper or article.

If you are writing an abstract for a course paper, your professor may give you specific guidelines for what to include and how to organize your abstract. Similarly, academic journals often have specific requirements for abstracts. So in addition to following the advice on this page, you should be sure to look for and follow any guidelines from the course or journal you're writing for.

The Contents of an Abstract

Abstracts contain most of the following kinds of information in brief form. The body of your paper will, of course, develop and explain these ideas much more fully. As you will see in the samples below, the proportion of your abstract that you devote to each kind of information—and the sequence of that information—will vary, depending on the nature and genre of the paper that you are summarizing in your abstract. And in some cases, some of this information is implied, rather than stated explicitly. *The Publication Manual of the American Psychological Association*, which is widely used in the social sciences, gives specific guidelines for what to include in the abstract for different kinds of papers—for empirical studies, literature reviews or meta-analyses, theoretical papers, methodological papers, and case studies.

Here are the typical kinds of information found in most abstracts:

1. the **context** or background information for your research; the **general topic** under study; the **specific topic** of your research
2. the **central questions** or statement of the **problem** your research addresses
3. **what's already known** about this question, what **previous research** has done or shown

4. the main **reason(s)**, the exigency, the **rationale**, the **goals** for your research—Why is it important to address these questions? Are you, for example, examining a new topic? Why is that topic worth examining? Are you filling a gap in previous research? Applying new methods to take a fresh look at existing ideas or data? Resolving a dispute within the literature in your field? . . .
5. your research and/or analytical **methods**
6. your main **findings, results, or arguments**
7. the **significance or implications** of your findings or arguments.

Your abstract should be intelligible on its own, without a reader's having to read your entire paper. And in an abstract, you usually do *not* cite references—most of your abstract will describe what *you* have studied in your research and what *you* have found and what *you* argue in your paper. In the body of your paper, you will cite the specific literature that informs your research.

When to Write Your Abstract

Although you might be tempted to write your abstract first because it will appear as the very first part of your paper, it's a good idea to wait to write your abstract until *after* you've drafted your full paper, so that you know what you're summarizing.

What follows are some sample abstracts in published papers or articles, all written by faculty at UW-Madison who come from a variety of disciplines. We have annotated these samples to help you see the work that these authors are doing within their abstracts.

Choosing Verb Tenses within Your Abstract

The **social science** sample (Sample 1) below uses the present tense to describe general facts and interpretations that have been and are currently true, including the prevailing explanation for the social phenomenon under study. That abstract also uses the present tense to describe the methods, the findings, the arguments, and the implications of the findings from their new research study. The authors use the past tense to describe previous research.

The **humanities** sample (Sample 2) below uses the past tense to describe completed events in the past (the texts created in the pulp fiction industry in the 1970s and 80s) and uses the present tense to describe what is happening in those texts, to explain the significance or meaning of those texts, and to describe the arguments presented in the article.

The **science** samples (Samples 3 and 4) below use the past tense to describe what previous research studies have done and the research the authors have conducted, the methods they have followed, and what they have found. In their rationale or justification for their research (what remains to be done), they use the present tense. They also use the present tense to introduce their study (in Sample 3, "Here we report . . .") and to explain the significance of their study (In Sample 3, This reprogramming . . . "provides a scalable cell source for. . .").

Sample Abstract 1

From the social sciences

Reporting new findings about the reasons for increasing economic homogamy among spouses

Gonalons-Pons, Pilar, and Christine R. Schwartz. "Trends in Economic Homogamy: Changes in Assortative Mating or the Division of Labor in Marriage?" *Demography*, vol. 54, no. 3, 2017, pp. 985-1005.

"The growing economic resemblance of spouses has contributed to rising inequality by increasing the number of couples in which there are two high- or two low-earning partners. The dominant explanation for this trend is increased assortative mating. Previous research has primarily relied on cross-sectional data and thus has been unable to disentangle changes in assortative mating from changes in the division of spouses' paid labor—a potentially key mechanism given the dramatic rise in wives' labor supply. We use data from the Panel Study of Income Dynamics (PSID) to decompose the increase in the correlation between spouses' earnings and its contribution to inequality between 1970 and 2013 into parts due to (a) changes in assortative mating, and (b) changes in the division of paid labor. Contrary to what has often been assumed, the rise of economic homogamy and its contribution to inequality is largely attributable to changes in the division of paid labor rather than changes in sorting on earnings or earnings potential. Our findings indicate that the rise of economic homogamy cannot be explained by hypotheses centered on meeting and matching opportunities, and they show where in this process inequality is generated and where it is not." (p. 985)

The first sentence introduces the **topic** under study (the "economic resemblance of spouses"). This sentence also implies the **question** underlying this research study: what are the various causes—and the interrelationships among them—for this trend?

These next two sentences explain what **previous research** has demonstrated. By pointing out the limitations in the methods that were used in previous studies, they also provide a **rationale** for new research.

The data, research and analytical **methods** used in this new study.

The major **findings** from and **implications** and **significance** of this study.

Sample Abstract 2

From the humanities

Analyzing underground pulp fiction publications in Tanzania, this article makes an argument about the cultural significance of those publications

Emily Callaci. "Street Textuality: Socialism, Masculinity, and Urban Belonging in Tanzania's Pulp Fiction Publishing Industry, 1975-1985." *Comparative Studies in Society and History*, vol. 59, no. 1, 2017, pp. 183-210.

"From the mid-1970s through the mid-1980s, a network of young urban migrant men created an underground pulp fiction publishing industry in the city of Dar es Salaam. As texts that were produced in the underground economy of a city whose trajectory was increasingly charted outside of formalized planning and investment, these novellas reveal more than their narrative content alone. These texts were active components in the urban social worlds of the young men who produced them. They reveal a mode of urbanism otherwise obscured by narratives of decolonization, in which urban belonging was constituted less by national citizenship than by the construction of social networks, economic connections, and the crafting of reputations. This article argues that pulp fiction novellas of socialist era Dar es Salaam are artifacts of emergent forms of male sociability and mobility. In printing fictional stories about urban life on pilfered paper and ink, and distributing their texts through informal channels, these writers not only described urban communities, reputations, and networks, but also actually created them." (p. 210)

The first sentence introduces the **context** for this research and announces the **topic** under study.

The remaining sentences in this abstract interweave other essential information for an abstract for this article. The implied **research questions**: What do these texts mean? What is their historical and cultural significance, produced at this time, in this location, by these authors? The **argument** and the **significance** of this analysis in microcosm: these texts "reveal a mode or urbanism otherwise obscured . . ."; and "This article argues that pulp fiction novellas. . . ." This section also implies what **previous historical research** has obscured. And through the details in its argumentative claims, this section of the abstract implies the kinds of **methods** the author has used to interpret the novellas and the concepts under study (e.g., male sociability and mobility, urban communities, reputations, network. . .).

Sample Abstract/Summary 3

From the sciences

Reporting a new method for reprogramming adult mouse fibroblasts into induced cardiac progenitor cells

Lalit, Pratik A., Max R. Salick, Daryl O. Nelson, Jayne M. Squirrell, Christina M. Shafer, Neel G. Patel, Imaan Saeed, Eric G. Schmuck, Yogananda S. Markandeya, Rachel Wong, Martin R. Lea, Kevin W. Eliceiri, Timothy A. Hacker, Wendy C. Crone, Michael Kyba, Daniel J. Garry, Ron Stewart, James A. Thomson, Karen M. Downs, Gary E. Lyons, and Timothy J. Kamp. "Lineage Reprogramming of Fibroblasts into Proliferative Induced Cardiac Progenitor Cells by Defined Factors." *Cell Stem Cell*, vol. 18, 2016, pp. 354-367.

"Several studies have reported reprogramming of fibroblasts into induced cardiomyocytes; however, reprogramming into proliferative induced cardiac progenitor cells (iCPCs) remains to be accomplished. Here we report that a combination of 11 or 5 cardiac factors along with canonical Wnt and JAK/STAT signaling reprogrammed adult mouse cardiac, lung, and tail tip fibroblasts into iCPCs. The iCPCs were cardiac mesoderm-restricted progenitors that could be expanded extensively while maintaining multipotency to differentiate into cardiomyocytes, smooth muscle cells, and endothelial cells in vitro. Moreover, iCPCs injected into the cardiac crescent of mouse embryos differentiated into cardiomyocytes. iCPCs transplanted into the post-myocardial infarction mouse heart improved survival and differentiated into cardiomyocytes, smooth muscle cells, and endothelial cells. Lineage reprogramming of adult somatic cells into iCPCs provides a scalable cell source for drug discovery, disease modeling, and cardiac regenerative therapy." (p. 354)

The first sentence announces the **topic** under study, summarizes what's **already known** or been accomplished in **previous research**, and signals the **rationale and goals are for the new research and the problem** that the new research solves: How can researchers reprogram fibroblasts into iCPCs?

The **methods** the researchers developed to achieve their goal and a description of the **results**.

The **significance or implications**—for drug discovery, disease modeling, and therapy—of this reprogramming of adult somatic cells into iCPCs.

Note: This journal calls this paragraph at the beginning of the article a "Summary," rather than an "Abstract." This journal provides multiple ways for readers to grasp the content of this research article quickly. In addition to this paragraph-length prose summary, this article also has an effective graphical abstract, a bulleted list of highlights list at the beginning of the article, and a two-sentence "In Brief" summary.

Sample Abstract 4, a Structured Abstract

From the sciences

Reporting results about the effectiveness of antibiotic therapy in managing acute bacterial sinusitis, from a rigorously controlled study

Note: This journal requires authors to organize their abstract into four specific sections, with strict word limits. Because the headings for this structured abstract are self-explanatory, we have chosen not to add annotations to this sample abstract.

Wald, Ellen R., David Nash, and Jens Eickhoff. "Effectiveness of Amoxicillin/Clavulanate Potassium in the Treatment of Acute Bacterial Sinusitis in Children." *Pediatrics*, vol. 124, no. 1, 2009, pp. 9-15.

Abstract

“OBJECTIVE: The role of antibiotic therapy in managing acute bacterial sinusitis (ABS) in children is controversial. The purpose of this study was to determine the effectiveness of high-dose amoxicillin/potassium clavulanate in the treatment of children diagnosed with ABS.

METHODS: This was a randomized, double-blind, placebo-controlled study. Children 1 to 10 years of age with a clinical presentation compatible with ABS were eligible for participation. Patients were stratified according to age (<6 or ≥6 years) and clinical severity and randomly assigned to receive either amoxicillin (90 mg/kg) with potassium clavulanate (6.4 mg/kg) or placebo. A symptom survey was performed on days 0, 1, 2, 3, 5, 7, 10, 20, and 30. Patients were examined on day 14. Children’s conditions were rated as cured, improved, or failed according to scoring rules.

RESULTS: Two thousand one hundred thirty-five children with respiratory complaints were screened for enrollment; 139 (6.5%) had ABS. Fifty-eight patients were enrolled, and 56 were randomly assigned. The mean age was 6630 months. Fifty (89%) patients presented with persistent symptoms, and 6 (11%) presented with nonpersistent symptoms. In 24 (43%) children, the illness was classified as mild, whereas in the remaining 32 (57%) children it was severe. Of the 28 children who received the antibiotic, 14 (50%) were cured, 4 (14%) were improved, 4(14%) experienced treatment failure, and 6 (21%) withdrew. Of the 28 children who received placebo, 4 (14%) were cured, 5 (18%) improved, and 19 (68%) experienced treatment failure. Children receiving the antibiotic were more likely to be cured (50% vs 14%) and less likely to have treatment failure (14% vs 68%) than children receiving the placebo.

CONCLUSIONS: ABS is a common complication of viral upper respiratory infections. Amoxicillin/potassium clavulanate results in significantly more cures and fewer failures than placebo, according to parental report of time to resolution.” (9)