HOW TO WRITE AN ABSTRACT

by Simon Moss

Introduction

During your candidature, you may need to write several abstracts—paragraphs that summarise your work. For example, your research proposal and thesis should begin with an abstract or summary. Likewise, whenever you apply to present at a conference, you will need to submit an abstract as well. This document offers some insights into how to write an effective abstract. In particular, this document will

* first clarify how to write a standard or typical abstract
* next, discuss how to write abstracts that diverge from these standards

Although this document is helpful, you will discover that your capacity to write abstracts improves after

* you have read, and analyzed, at least 10 abstracts in your field
* you have written your introduction, method, results, and perhaps discussion

## A standard abstract

A standard abstract usually comprises between 150 and 300 words, depending on the conference, journal, and discipline. The first column of the following table presents the main contents of an abstract. The other two columns present examples.

|  |  |  |
| --- | --- | --- |
| Main contents | Illustration 1 | Illustration 2 |
| **Background.** Write one to three sentences about the problem in society, or controversy in the literature, you are attempting to resolve, primarily to justify the importance of this study. You might, for example, first highlight the prevalence or significance of some problem. You might then describe the limitations of previous attempts to resolve this problem. | Across the globe, approximately 25% of research candidates withdraw from their degree before completing their thesis and, therefore, squander significant time, effort, and resources. Although many universities have updated their selection procedures or improved training to address this problem, this elevated incidence of withdrawal has persisted. | Waterbirds often travel vast distances in directions that depends significantly on fluctuating conditions in the environment. Consequently, ornithologists cannot readily characterize the distribution and habitat use of these waterbirds. |
| **Purpose.** Write one to three sentences to clarify the aim or purpose of this study. Although usually one sentence is adequate, a second or third sentence could be included to clarify the unique feature of this research, to justify the approach, or to present the hypotheses. | Instead, this study explored a novel intervention, designed to diminish the rate of withdrawals, in which research supervisors were encouraged to demonstrate greater humility. This intervention was predicated on the theory that humility in supervisors inspires research candidates to acknowledge their own challenges, promoting honest discussion. | The aim of this study was to explore the extent to which weather surveillance radar can be used to track waterbird populations. |
| **Methods.** Write one to four sentences that describe the method. Only include enough details to enable the reader to understand the research—to be able to visualize the research. If your study comprises human participants, you would primarily describe the activities the participants completed. If your study mainly comprises animals, specimens, chemicals, or other objects, you would primarily describe the main activities that you completed and the properties of these objects. You should also prioritize features that differentiate this study from past research | To assess this intervention, 120 research supervisors, from two American universities, were randomly assigned to either attend a workshop on humility or attend a control workshop on personal finances. Before and after this workshop, one of their research candidates—the candidate they had supervised over the longest time—completed a survey that assessed personal motivation, commitment, and progress. | To demonstrate the utility of this approach, this study examined the degree to which weather surveillance can be utilized to map the distribution and habitat of the common ringed plover. In particular, this approach was utilized to map the location of these birds at six different times of the year throughout Australia. |
| **Findings**. Write one to three sentences that summarize the findings or results. In general, describe a few significant patterns or discoveries rather than specific details or statistics, unless critical. Write concretely but refrain from too many details. | If their supervisors had completed training on humility, research candidates were more likely to report elevated levels of motivation, commitment, and progress over time. | This approach uncovered seven populations of the common ringed plover, two of which had not been surveyed before. |
| **Conclusions.** Finally, the abstract usually includes one or two sentences that clarify the key implications or conclusions. Avoid generic statements that apply to all studies, such as “Future research is needed to clarify the issue”. After all, future research is always needed to clarify the issue | Thus, initiatives that inspire humility in research supervisors could significantly diminish the costs that universities incur when research candidates withdraw from their studies. | This approach could be utilized to map the habit and distribution of many other waterbirds, including endangered species, in the future. |

## Key principles

The previous table outlined the key features of typical abstracts. Before learning about some deviations from these standards, you should first learn about the principles you should follow to optimize your abstracts. The following table outlines these principles.

|  |  |
| --- | --- |
| Principles | Details or justifications |
| Whenever possible, assume the reader has accrued no knowledge about the topic. | That is, if you can, refrain from technical words that only experts understand—or briefly explain these words. Write as simply as possible. |
| Check the word limit | For some journals, the abstract must comprise fewer than 150 words. For other journals, the abstract must comprise fewer than 250 words, and so forth. |
| Typically, the abstract should comprise one paragraph, with no headings. Usually, the heading Abstract appears above, typically centred and in bold. | Some journals, however, instruct authors to include subheadings, such as   * background * purpose * method * results, and * conclusions.   Although uncommon, other journals encourage authors to construct videos or pictures that summarize the research instead. |
| In general, you should not include unnecessary details, such as citations and statistical tests. Indeed, the abstract should be as concise and precise as possible | To learn how to write more concisely and precisely, read the document on concise and precise writing, available in the section called “How to write more effectively” |

## Variations from the standard abstract

The document, thus far, has described a standard abstract only. However, you should also learn how to write abstract that diverge from this exemplar. For example

* many candidates like to include a longer abstract in their thesis—perhaps up to 600 words for a PhD or 300 words for a Masters by Research
* the contents of abstracts differ when the research is not empirical

**Long abstracts**

For your thesis, and in some other circumstances, you might write longer abstracts. Indeed, CDU does not impose a word limit on abstracts—although more than 600 words is usually excessive. Besides a few exceptions, the principles you utilize to write typical sentences also apply to longer abstracts. Specifically

* you might dedicate more than three sentences to outline background, purpose, method, results, or conclusion.
* if your research comprises two or more studies, you might describe each study in turn.

To illustrate, your abstract might utilize the following arrangement, in which the author describes the method and results of Study 1 and, then, the method and results of Study 2.

* In Study 1, 120 research supervisors were randomly assigned to either attend a workshop on humility or attend a control workshop on personal finances. Both before and after this workshop, one of their research candidates—the candidate they had supervised over the longest time—completed a survey that assessed personal motivation, commitment, and progress.
* If their supervisors had completed training on humility, research candidates were more likely to report elevated levels of motivation, commitment, and progress over time.
* Study 2 was similar, except the control workshop revolved around another topic: physical fitness
* Again, research candidates were more inclined to feel motivated and committed if their supervisors had completed training on humility

**Systematic literature reviews**

If you conduct a systematic review, the abstract also tends to outline the background, purpose, methods, results, and conclusions. But, the key details of systematic reviews diverge from the key details of standards abstracts. The following table specifies the key details of systematic reviews, together with some examples.

|  |  |
| --- | --- |
| Principle | Example |
| The background of a systematic review resembles the background of a standard abstract. | Across the globe, approximately 25% of research candidates withdraw from their degree before completing their thesis and, therefore, squander significant time, effort, and resources. Although many universities have updated their selection procedures or improved training to address this problem, this elevated incidence of withdrawal has persisted. |
| The purpose or aims of a systematic review resemble the purpose or aims of a standard abstract—but refer to the systematic review | This systematic review was conducted to characterize the interventions that universities apply to prevent withdrawal and promote completions—as well as to explore the degree to which these interventions are perceived as acceptable, feasible, and useful. |
| When describing the methods of a systematic review, you should specify   * the databases you utilized, or other procedures you applied, to extract studies * the search terms you entered to extract studies * the eligibility criteria you applied to decide which studies to include * the data that you extracted from each study * procedures you applied to measure and manage biases in the study | To extract the studies, search terms that related to withdrawal, retention, and completion of doctoral, PhD, or research candidates were entered into several databases, including Scopus, Medline, and PsycINFO. Furthermore, other studies were derived from theses, emails to key authors, and references lists. All quasi-experimental or experimental studies that measured withdrawal, retention, and completion in research candidates were included. Effect sizes that represent the impact of various interventions was extracted. The level of sample bias and attrition bias in each study was measured and reported. |
| When describing the results, specify   * the number of publications that met various criteria * the main findings or patterns you uncovered * limitations of the results, such as biases | These procedures uncovered 43 studies, reported in 38 distinct publications. The most common interventions revolved around interviews during the selection procedure, resilience training, writing workshops, and career management. Interviews during selection procedures tended to increase the likelihood that PhD candidates, but not Masters by Research candidates, would finish their thesis. Resilience training tended to expedite completions but not influence the rate of withdrawal. No other interventions tended to be effective. Sampling biases, however, affected over 60% of the studies |
| The conclusion of a systematic review resembles the conclusion of a standard abstract | These results suggest that interviews and training that increases the resilience of candidates tend to diminish the likelihood of withdrawals. |

Abstracts of meta-analyses are similar to abstracts of systematic reviews, but also describe the statistical tests that were performed, the software that was utilized, and the results of these statistical tests. For further information, you should read several abstracts of meta-analyses and then emulate these abstracts.

**Abstracts with no findings**

Sometimes, your papers do not present findings—such as a paper that outlines a theory or reviews the literature. In these instances, to construct an abstract

* divide the paper into 5 to 10 main sections
* for each section, write 1 to 3 sentences
* integrate these sentences to generate an abstract