

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ  
Государственное образовательное учреждение высшего профессионального образования  
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**МЕТОДИЧЕСКИЕ УКАЗАНИЯ  
по составлению и оформлению  
аннотаций на английском языке**

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## 1. Definition and qualities of abstract

### 1.1. Definition of abstract

An abstract is a concise statement of the major elements of a research project, and the reader's first encounter with the research. Essentially, it should act as an advertisement for the work. It states the purpose, methods, and findings of the research project.

#### A Sample Abstract

PASM: A partitionable SIMD/MIMD System for Image Processing and Pattern Recognition.

PASM, a large-scale multimicroprocessor system being designed at Purdue University for image processing and pattern recognition, is described. This system can be dynamically reconfigured to operate as one or more independent SIMD and/or MIMD machines. PASM consists of a parallel computation unit, which contains N processor, N memories, and an interconnection network; Q microcontrollers, each of which controls N/Q parallel secondary storage devices; a distributed memory management system; and a system control unit, to coordinate the other system components. Possible values for N and Q are 1024 and 16, respectively. The control schemes and memory management on PASM are explored. Examples of how PASM can be used to perform image processing tasks are given.

### 1.2. Qualities of abstract

An effective abstract has the following qualities:

- uses one or more well developed paragraphs: these are unified, coherent, concise, and able to stand alone;
- uses an introduction/body/conclusion structure which presents the article, paper, or report's purpose, results, conclusions, and recommendations in that order;
- follows strictly the chronology of the article, paper, or report;
- provides logical connections (or transitions) between the information included;
- adds **no** new information, but simply summarizes the report;
- is understandable to a wide audience.

## 2.Types of abstracts

There are two types:

A **descriptive** abstract identifies the areas to be covered in the report and does not demonstrate the paper's content. Descriptive abstracts:

- tell readers what information the report, article, or paper contains;
- include the purpose, methods, and scope of the report, article, or paper;
- do **not** provide results, conclusions, or recommendations;
- are always very short, usually under 100 words;
- introduce the subject to readers, who must then read the report, article, or paper to find out the author's results, conclusions, or recommendations.

An **informative** abstract summarizes the entire report and gives the reader an overview of the facts that will be investigated in more details in the paper or presentation itself. Informative abstracts:

- communicate specific information from the report, article, or paper;
- include the purpose, methods, and scope of the report, article, or paper;

- provide the report, article, or paper's results, conclusions, and recommendations;
- are short -- from a paragraph to a page or two, depending upon the length of the original work being abstracted. Usually informative abstracts should not exceed 250 words;
- allow readers to decide whether they want to read the report, article, or paper.

As an abstract could be written for documents of any size, there are general guidelines about how long an abstract should be:

- for an editorial or letter to the editor, 30 words or less;
- for a short note or short communication, 100 words or less;
- for a shorter paper or article, 150-200 words or less;
- for a longer paper, article, or book chapter, 250 words or less;
- for long documents like a thesis or book, 300 words or less.

### 3. Purpose of abstract writing

An abstract is written:

- to allow readers to make decisions about the project;
- to help the sponsoring professor to judge if the research is proceeding smoothly;
- for the conference organizer to decide if the project fits the conference criteria;
- for the conference audience (faculty, administrators, peers, and presenters' families) to see whether or not to attend the panel;
- to apply for research grants;
- to submit articles to journals (especially online);
- when writing a proposal.

The **informative** type of abstracts is recommended to serve the stated purposes.

### 4. Structure of abstract

An **informative** abstract is made up of five parts:

- Purpose
- Methodology
- Results
- Conclusions
- Keywords

The **purpose** section of an informative abstract should state either the **reason** for or the **primary objectives** of the experiment or investigation. The purpose section of an informative abstract might also contain the **hypothesis** of the experiment.

The **methodology** section of an informative abstract should describe the **techniques** used in conducting the experiment or solving the problem (simulation, analytic models, prototype construction, analysis of field data, etc.). The abstract should not focus entirely on research methods unless that is the primary focus of the original document.

The **results** section of an informative abstract should relate the **observations** and/or **data collected** during the experiment. This section should be concise and informative, and only the most important results need be included.

The **conclusion** section of an informative abstract should state the **evaluation** or **analysis** of the experiment results. It should also briefly state the implications of these results. This conclusion section might also state whether the driving hypothesis of the experiment was correct. Findings should be **reported**, not commented.

Using **keywords** is a vital part of abstract writing, because of the practice of retrieving information electronically: keywords act as the search term. An abstract should use keywords that are **specific**, reflect what is **essential** about the paper, and **assign** the paper to a review category obviously.

Optional sections that might be included are:

- a specific and detailed **title**, indicating the investigated question;
- a brief introduction to the topic-providing context or **background**;
- possibly some call for **future research**;
- **Category** for the paper.

To meet the requirements of science journals or conferences an abstract may include the statement of the category. This makes the paper searchable within the database. Most common categories are:

- **Research paper.** This category covers papers which report on any type of research undertaken by the author(s). The research may involve the construction or testing of a model or framework, action research, testing of data, market research or surveys, empirical, scientific or clinical research.
- **Viewpoint.** Any paper, where content is dependent on the author's opinion and interpretation, should be included in this category; this also includes journalistic pieces.
- **Technical paper.** Describes and evaluates technical products, processes or services.
- **Conceptual paper.** These papers will not be based on research but will develop hypotheses. The papers are likely to be discursive and will cover philosophical discussions and comparative studies of others' work and thinking.
- **Case study.** Case studies describe actual interventions or experiences within organizations. They may well be subjective and will not generally report on research. A description of a legal case or a hypothetical case study used as a teaching exercise would also fit into this category.
- **Literature review.** It is expected that all types of paper cite any relevant literature so this category should only be used if the main purpose of the paper is to annotate and/or critique the literature in a particular subject area. It may be a selective bibliography providing advice on information sources or it may be comprehensive in that the paper's aim is to cover the main contributors to the development of a topic and explore their different views.
- **General review.** This category covers those papers which provide an overview or historical examination of some concept, technique or phenomenon. The papers are likely to be more descriptive or instructional ("how to" papers) than discursive.

Science journals increasingly require strictly structured abstracts (an example is appended).

Whatever kind of research is being done, the abstract should provide the reader with the answers to the following questions: What is being asked? Why is it important? How will it be studied? What will be used to demonstrate the conclusions? What are those conclusions? What do they mean?

## 5. Writing guidelines

An abstract must be a fully self-contained, capsule description of the paper. More often than not, an abstract will be addressing an educated non-expert to understand the purpose and value of the work. It is essential to find a comfortable balance between

writing an abstract that both shows knowledge and yet is still comprehensible - with some effort - by lay members of the audience.

The **recommendations** to write a well-structured, concise and cohesive abstract are:

- to cover the major parts of the paper;
- to stick to the facts;
- to avoid personal and biographical references (e.g., “Dr. Seuss argues”);
- not to be excessively wordy;
- to start with a good general (but not TOO general) claim;
- not to copy sentences from the work, which leads to putting in too much information;
- not to use massive abstractions of thought or theoretical jargon;
- to limit the amount of technical language and explain it where possible;
- to avoid equations and math;
- to keep citations brief, current, and relevant;
- to use plain English, and avoid trade names, acronyms, abbreviations or symbols;
- to use the full term before referring to it by acronym;
- not to use too many (irrelevant) parenthetical comments, unnecessary italicization, and enthusiastic punctuation;
- to avoid future tense like “I will argue...” or “I will analyze...” (which suggests the work has not been done yet), and to avoid phrases like “I hope to...” or “I expect to...” which sounds less self-assured;
- to avoid use of “in this paper...”, “This work describes...”, “this report...”. It is better to write about the research than about the paper;
- not to begin sentences with “it is suggested that...” “it is believed that...”, “it is felt that...” or similar. In every case, the four words can be omitted without damaging the essential message;
- do not explain the sections or parts of the paper;
- do not repeat or rephrase the title;
- do not refer in the abstract to information that is not in the document;
- if possible, avoid trade names, acronyms, abbreviations, or symbols. You would need to explain them, and that takes too much room;
- to use simple sentences, but to vary sentence structure to avoid choppiness;
- to choose active verbs whenever possible;
- to make logical connections and good transitions;
- to use complete sentences;
- to meet the word count limitation (200 to 250 words commonly). If an abstract runs too long it is either rejected or cut mechanically to meet size restrictions.

**An abstract should include the few things you would like your reader to remember long after the details of your paper may be forgotten.**

#### **Qualities of a Good Abstract**

- Well developed paragraphs are **unified, coherent, concise**, and able to stand alone.
- Uses an introduction/body/conclusion structure which presents the article, paper, or report's purpose, results, conclusions, and recommendations in that order.
- Follows strictly the chronology of the article, paper, or report.
- Provides logical connections (or transitions) between the information included.
- Adds no new information, but simply summarizes the report.

- Is understandable to a wide audience.
- Oftentimes uses passive verbs to downplay the author and emphasize the information.

### **Steps to Writing Effective Abstracts**

1. Reread the article, paper, or report with the goal of abstracting in mind.
2. Look specifically for these main parts of the article, paper, or report: purpose, methods, scope, results, conclusions, and recommendation.
3. If you're writing an abstract about another person's article, paper, or report, the introduction and the summary are good places to begin.
4. These areas generally cover what the article emphasizes. After you've finished rereading the article, paper, or report, write a rough draft without looking back at what you're abstracting.

### **Don'ts**

**Don't merely copy key sentences** from the article, paper, or report: you'll put in too much or too little information.

**Don't rely** on the way material was phrased in the article, paper, or report: **summarize information in a new way.**

### **Voice**

Scientists have grappled for years over the appropriate way to talk about discoveries: should it be

"We measured ion concentration in the blood"

Or

"Ion concentration in the blood was measured"?

Modern scientific style prefers the active voice. Abstracts are often an exception, but only if the passive voice reduces the total number of letters and words.

### **Don'ts**

- Do not commence with "**this paper...**", "**this report...**" or similar. It is better to write about the research than about the paper.
- **The abstract should be about the research, not about the act of writing.**



## The tasks for the students:

### Examples of abstract

An example abstract from a chemistry report

<p><b>ABSTRACT</b></p> <p>In this experiment, chromatography was used to analyse amino acids in solution. Standards were used to identify unknown amino acids in a mixture. Ascending layer chromatography with an isopropanol-based solvent was used to separate the amino acids, which were then detected with ninhydrin. The unknown mixture analysed was found to contain aspartate and histidine. It was observed that hydrophobic amino acids were most mobile. This technique was shown to be an effective way of analysing unknown mixtures of amino acids. A mechanism for ninhydrin binding to amino acids is proposed, based on observations from this experiment.</p>	<p><b>Find the following parts of Abstract</b></p> <ol style="list-style-type: none"><li>1. Conclusion</li><li>2. Method</li><li>3. Further conclusion</li><li>4. Results</li><li>5. Description aim/objective</li></ol>
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### Questions an Abstract Answers

- Why did you do this study or project?
- What did you do, and how?
- What did you find?
- What do your findings mean?
- If the paper is about a new method or apparatus the last two questions might be changed to
- What are the advantages (of the method or apparatus)?
- How well does it work?

### KEY: Examples of abstracts

An example abstract from a chemistry report

<p><b>ABSTRACT</b></p> <p>In this experiment, chromatography was used to analyse amino acids in solution. Standards were used to identify unknown amino acids in a mixture. Ascending layer chromatography with an isopropanol-based solvent was used to separate the amino acids, which were then detected with ninhydrin. The unknown mixture analysed was found to contain aspartate and histidine. It was observed that hydrophobic amino acids were most mobile. This technique was shown to be an effective way of analysing unknown mixtures of amino acids. A mechanism for ninhydrin binding to amino acids is proposed, based on observations from this experiment.</p>	<p>Description aim/objective</p> <p>Method</p> <p>Results</p> <p>Conclusion</p> <p>Further conclusion</p>
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## **6. Appendix**

### **6.1. Instructions for writing a structured abstract for Emerald**

Emerald has introduced a new format for article abstracts intended to help researchers by consistently providing the most useful information. Each abstract is made up of a number of set elements. An example is provided at the foot of this page.

#### **1. Write the abstract**

To produce a structured abstract for the journal and Emerald database, please complete the following fields about your paper. There are four fields which are obligatory (Purpose, Design/methodology/approach, Findings and Originality/value); the other three (Research limitations/implications, Practical implications, and Social implications) may be omitted if they are not applicable to your paper. Abstracts should contain no more than 250 words. Write concisely and clearly. The abstract should reflect only what appears in the original paper.

##### **Purpose**

What are the reason(s) for writing the paper or the aims of the research?

##### **Design/methodology/approach**

How are the objectives achieved? Include the main method(s) used for the research. What is the approach to the topic and what is the theoretical or subject scope of the paper?

##### **Findings**

What was found in the course of the work? This will refer to analysis, discussion, or results.

##### **Research limitations/implications (if applicable)**

If research is reported on in the paper this section must be completed and should include suggestions for future research and any identified limitations in the research process.

##### **Practical implications (if applicable)**

What outcomes and implications for practice, applications and consequences are identified? How will the research impact upon the business or enterprise? What changes to practice should be made as a result of this research? What is the commercial or economic impact? Not all papers will have practical implications.

##### **Social implications (if applicable)**

What will be the impact on society of this research? How will it influence public attitudes? How will it influence (corporate) social responsibility or environmental issues? How could it inform public or industry policy? How might it affect quality of life? Not all papers will have social implications.

##### **Originality/value**

What is new in the paper? State the value of the paper and to whom.

#### **2. Using keywords**

Using keywords is a vital part of abstract writing, because of the practice of retrieving information electronically: keywords act as the search term. Use keywords that are specific, and that reflect what is essential about the paper. Put yourself in the position of someone researching in your field: what would you look for? Consider also whether you can use any of the current "buzz words".

### 3. Choose a category for the paper

Pick the category which most closely describes your paper. We understand that some papers can fit into more than one category but it is necessary to assign your paper to one of the categories – these are listed and will be searchable within the database:

- Research paper.
- Viewpoint.
- Technical paper.
- Conceptual paper.
- Case study.
- Literature review.
- General review.

### 6.2.Examples of well-structured abstracts

#### Abstract 1

#### **Some applications of thermophiles and their enzymes for protein processing**

**Jozef Synowiecki**

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Accepted 3 September, 2010

Proteolytic enzymes produced by thermophiles are of considerable interest because they are stable and active at elevated temperatures. Moreover, they are resistant to organic solvents, detergents, low and high pH and other denaturants. Such properties allow many technological processes. Advantages of thermozyms applications are reduced risk of microbial contamination, increased mass transfer, lower viscosity and improved susceptibility of some proteins to enzyme molecules. This review covers thermostabilization strategies and some properties of thermostable proteases as well as their current and future applications in food processing, medicine and some other industries.

**Key words:** Thermozyms, keratinases, proteases, thermophiles.

#### Abstract 2

#### **Uptake and Recovery of Lead by Agarose Gel Polymers**

1Anurag Pandey, 2Anupam Shukla and 3Lalitagauri Ray 1School of Biotechnology, Rajiv Gandhi Technological University, Bhopal- 462 036 India 2Atal Bihari Vajpayee-Indian Institute of Information Technology and Management,

Gwalior-474 010 India 3Department of Food Technology and Biochemical Engineering, Jadavpur University, Kolkata-700 032 India

#### **Abstract**

**Problem statement:** The uptake and recovery of lead ions were investigated by using agarose gel polymers.

**Approach:** The experimental results showed that the agarose gel were effective in removing Pb (II) from solution. Biosorption equilibrium was approached within 4 h. Pseudo second order was applicable to all the sorption data over the entire time range.

**Results:** The sorption data conformed well to both the Langmuir and the Freundlich isotherm model. The maximum adsorption capacity ( $q_{max}$ ) onto agarose gel was 115 mg g<sup>-1</sup> for Pb (II). The maximum uptake of metal ions was obtained at pH 2.0. At temperature 35°C, the biosorption of metal ions was found to be highest, with increase or decrease in temperature resulted in a decrease in the metal ions uptake capacity.

**Conclusion:** Elution (вымывание) experiments were carried out to remove Pb (II) ions from loaded agarose gel and the bound metal ions could be eluted successfully using 0.1 M EDTA solution. The results suggest that agarose gel can be used as a biosorbent for an efficient removal of Pb(II) ions from aqueous solution.

**Key words:** Uptake, recovery, biosorption, lead, agarose gel

### Abstract 3

**Article Title:** Women Engineers in Kuwait: Perception of Gender Bias

**Authors:** P.A. Koushi, H.A. Al-Sanad, and A.M. Larkin of Kuwait University

#### Abstract

This study represents an attempt to quantify attitudes toward gender bias among profession women engineers working in the State of Kuwait. The major findings that emerged were as follows: a) Since 1970, Kuwait has witnessed an enormous growth rate in the participation of women in higher education. b) With respect to the job-related factors of salary scale, professional treatment, responsibility, benefits, and vacation, a clear majority (68%) of the professional Kuwaiti women engineers surveyed expressed a feeling of equality with or even superiority to their male counterparts. c) The one job-related factor in which significant gender bias was found to be in operation was that of promotion to upper management positions. In this criterion, the women engineers surveyed felt “less than equal” to their male colleagues.

### Abstract 4

#### Structuring international service operations: a theoretical framework and a case study in the IT-sector

Bert Meijboom and Migon Houtepen

*International Journal of Operations & Production Management*

Vol. 22 No. 8

Research paper

**Purpose:** The specific challenges with which companies pursuing international manufacturing strategies are faced, if their output also contains a service dimension, are addressed.

**Design/methodology/approach:** A theoretical framework is proposed based on three virtually complementary perspectives by integrating international production, demand, and contemporary ICT-based theory. Subsequently, an exploratory case study in a pure service environment is described that illustrates the value of the framework.

**Findings:** It is possible, for example, to apply the theoretical framework to case studies in internationally-operating companies delivering a mix of goods and services.

**Research limitations/implications:** The present study provides a starting-point for further research in the international manufacturing sector.

**Originality/value:** Moreover, the framework has proven to be useful in improving the European structure of the case company. This is a notable and promising side-effect of the exploratory study, at least from a managerial point of view.

**Keywords:** *Multinationals, Service operations, Location, Decision making, Case studies*

### 6.3. Examples of poorly written abstracts with comments

ДОЦЕНТ, К.П.Н. **Abstract 1**

**Article Title:** Elements of an Optimal Experience

**Authors:** Shall remain unnamed ☺

#### **Abstract**

This paper presents and assesses a framework for an engineering capstone design program. We explain how student preparation, project selection, and instructor mentorship are the three key elements that must be addressed before the capstone experience is ready for the students. Next, we describe a way to administer and execute the capstone design experience including design workshops and lead engineers. We describe the importance in assessing the capstone design experience and report recent assessment results of our framework. We comment specifically on what students thought were the most important aspects of their experience in engineering capstone design and provide quantitative insight into what parts of the framework are most important.

#### **Comments on abstract 1:**

(1) This abstract begins well with a concise statement of the objectives of the paper, but then wanders from good technical writing style from there.

(2) The abstract is written in the first person (e.g. “We explain...”, “We discuss...”, “We comment...”, etc.).

(3) No results are presented. This poorly written abstract describes only the organization of the paper.

#### *Example:*

“Next, we describe... We comment specifically on what students thought were the most important aspects of their experience in engineering capstone design...”

Instead, the abstract should summarize the actual results and how they were obtained.

#### *Example:*

“A statistical analysis was performed on answers to survey questions posed to students enrolled in a capstone design course at Georgia Tech. The analysis showed that students thought the most important aspects of their experience in engineering capstone design were quality of the instructor and quantity of student/instructor interaction time.”

### **Abstract 2**

Computer Assisted Learning (CAL) is an area which is rapidly expanding amongst Higher Education institutions as the power of available hardware rises facilitating new and innovative HE teaching and learning environments. The University Institute of recently allocated funds to stimulate a learning technology program which was generally intended to impinge on all 4 Faculties within the institution. Each faculty was asked to bring forward, software development schemes and bids for equipment and other, necessary resources such as human resources, consumables, etc. The purpose of this paper is to describe the experience of a team of academics in the Department of French, School of Modern Languages within the Faculty of Arts, Humanities and Social Studies at the University Institute of in the development of a Computer-assisted learning software program. Funding was made available from a central source to develop and implement a software program to assist French language learners to acquire vocabulary in "an innovative and measurably effective manner". The software was implemented and tested on a cohort of level 2 students who had, in general, studied French for 8 years, and staff and students were consulted with regards to their reactions.

### **Comments on Abstract 2**

Half the abstract is taken up with unnecessary background information about the funding. The full title of the department is unnecessary detail. All this is very wordy, and doesn't relate to what the paper is about. The "purpose" statement could be rephrased: "This paper describes the evaluation of a piece of software designed to assist the acquisition of French vocabulary with a group of level 2 students". There needs to be more description of the methodology – how many students? How was the testing done? What, precisely, was evaluated? What were the findings, and what are the implications of the findings? The language used is vague – what is meant by "other, necessary resources such as human resources, consumables, etc.", what was "demonstrably efficient" about the style of learning? What was the nature of the consultation with staff and students? There are also a number of grammatical errors, e.g. commas in the wrong places (substantiate, software development). "Mock posh" language is used, i.e. the reference to academics (don't need to use this word unless differentiating from administrators). In short, the abstract contains much information which is of only marginal importance, and merely repeats, almost word for word, what is in the body text; the syntax and punctuation is often defective, verbose and trying too hard to write in an "academic" manner. True of much of the paper.

### **Abstract 3**

Reviews the manufacturing and processing challenges involved in the later stages of the manufacture of large area full frontal wire mesh coating and describes some of the techniques employed by CSW Packaging Solutions.

### **Comments on Abstract 3**

This abstract is far too short and does not provide enough information about the paper. It describes the purpose of the paper and its main subject but gives us nothing on what was done (method) or on results. Specifically, it could have listed the "techniques" mentioned, provided some of the key criticisms and then gone on to implications for practice, i.e. recommendations.

### **Abstract 3**

In this article, research as "mass media" (Lerhmann) is appraised. "Videocy" or videoed research results are examined. A form of video research with its roots in action research, Cabalistic methodology and oral anthropology is reported on. The counterparts it produces, wherein disclosure loops are used to produce an effect similar to the fractalizations of reality, achieves a powerful simulation of reality. But is it a "responsible" form of (research) practice?

### **Comments on Abstract 3**

We are given the paper's purpose but nothing about the methodology and it doesn't explain the scope of the study. It's too short and last but not least, it leaves us with a question!! No summary or results or conclusions are given. An abstract shouldn't be like an advertisement or cliff hanger in a TV serial. The language is abstruse, it's not long enough, and out of context it's fairly meaningless.

### **How to Write a Feasibility Report**

A feasibility report examines a problem and its possible solutions. The report determines how practical the solutions are and what it might cost an organization to implement them. These types of reports are often used within technical organizations regarding product development.

Difficulty: Moderate

#### *Instructions*

#### *Things You'll Need:*

- Details on the product or project
- Information on the alternative solutions

#### **How to Write a Feasibility Report**

1. Create a summary giving an overview of the report.
2. Create a glossary of terms that will be used within the report.
3. Write an introduction that tells the purpose of the report.
4. Discuss all alternatives and options.
5. Write a conclusion summarizing the entire report and what decision was made from the conducted research.
6. Write recommendations that give your final solution or opinion.
7. Provide references citing all sources from your research.
8. Write an abstract that includes the problem, methods, conclusions and results of your report. Since this is a stand alone document, be complete and concise. This will entice the reader to continue on to the actual report.
9. Place the abstract at the beginning of your paper before the introduction.
10. Create an appendix siting extra information about the report such as books and websites.

### **Typical components of a design and feasibility report**

- 1. Title**
- 2. Contents**
- 3. Informative Abstract**
- 4. Introduction**

- **Technical Background** - Is technical discussion needed in order to make the rest of the report meaningful to readers (Remember that this section need not be included.)
  - **Background on the situation** - How much discussion will you need to explain the problem, need, or opportunity that has brought about this report? If there is little that needs to be said about it, this information can go in the introduction.
5. **Discuss the Options** - You may also need to provide brief descriptions of the options. Do not get this mixed up with the comparison which will be in the next section. The descriptive section provides a general discussion of the options so that readers will know something about them. The descriptive section does not compare the options. It is just a general orientation that gives some brief specifications to the options.
  6. **Category-by-Category Comparisons** - How should you compare the options? Remember that you write this section so that readers can check your ideas and even draw different conclusions, if they desire. You would write a section that discusses each of those points. How should you end the comparative sections? End with a conclusion that states which option is the best choice in that particular category of comparison.
  7. **Conclusions** - The conclusion entails summarizing or restating the conclusions you have already reached in the comparison sections. So, the conclusion section first lists the simple, single-category conclusions. Then it states the overall conclusion that balances conflicting single-category conclusions, and ends with a statement that says which option is the best choice.
  8. **Recommendation or Final Opinion** - What is your recommendation or final opinion? You would think that that is obvious by now. It should be. Also, the best choice may be clear but maybe you would not want to recommend it. The recommendation section should delineate the most important conclusions leading to the recommendation and then state the recommendation. You may need to recommend several options based on different possibilities. A good way to handle this is with bulleted lists. Additionally, a recommendations section includes "recommendations for further action and a listing of issues that must be resolved before the design can be implemented" (Perelman, 1998, p. 81).
  9. **References and notes**
  10. **Appendixes**



## 7. References

1. Philip Koopman, How to Write an Abstract, Carnegie Mellon University, October, 1997
2. Writing Abstracts. LEO: Literacy Education Online, <http://leolink@stcloudstate.edu>
3. Guidelines for Abstract Writing. Massachusetts Statewide Undergraduate Research Conference.
4. Abstracts for scientific articles. (Writing Professionally). Journal of Environmental Health, 01-NOV-02
5. Hills North, Annaliese Bischoff. Abstract Presentation. University of Massachusetts, Amherst MA 01003, <http://abischof@larp.umass.edu>
6. Writing Tutorial Services, Indiana University, Bloomington, IN
7. [http://urc.ucdavis.edu/urc\\_writing.html](http://urc.ucdavis.edu/urc_writing.html)
8. [http://www.washington.edu/oue/summer\\_institute/writing.html](http://www.washington.edu/oue/summer_institute/writing.html)
9. <http://writing2.richmond.edu/training/project/biology/abslit.html>