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## ANATOMY OF EFFECTIVE ABSTRACTS

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**Abstract:** The term abstract signifies a brief, objective representation of the contents of a primary document or an oral presentation. An abstract is usually the last section written by the authors, but it is the first section of the paper that is read by the editors and reviewers. The abstract should highlight the selling point of the research work and should lure the readers to read the whole paper. The abstract should be *clear*, i.e., readable, well organized, and not too jargon-laden. The fundamental purpose of the abstract is to inform the reader succinctly what the paper is about, why and how the research was carried out, and what conclusions could be drawn. This conceptual paper delineates the anatomy of effective abstracts viz, title, authorship, types of abstracts and key words in addition to the style, formats and linguistic components of abstracts with lucid examples.

**Index Terms** – title; authorship; abstracts; types; style; formats; linguistic components.

### I. Introduction

A good abstract is like a traffic sign on the edge of a busy highway; easy to see even in the chaos of a rush hour, easy to understand, and accurate (Edmond, 2019). Swales (1990) stated that the abstract is both a summary and a 'purified' reflection of the entire article, while Bhatia (1993) refers to the informative function of abstracts, claiming that they present "a faithful and accurate summary, which is representative of the whole article". In simplest terms, Laura Riordan, (2015) argues that an abstract is a short summary of an article. Taking a step further, Papanas et al, (2012) observed that a research abstract is a written synopsis aptly reflecting the contents of an article or presentation, which, in turn, describes original investigation of the authors. The purpose of the abstract is to inform the reader succinctly of what the paper is about, why the research was carried out, what happened, and what conclusions might be drawn (Hartley,2017).

The word abstract comes from the Latin '*abstractum*', which means a condensed form of a longer piece of writing. Abstracts are important parts of academic assignments, most often, reports and research papers. The abstract is the last item that you write but the first one people read when they want to have a quick overview of the whole paper.

Public Library of Science (PLOS) (2016) defines the abstract as follows:

"The abstract succinctly introduces the paper. It should mention the techniques used without going into methodological detail and mention the most important results. The abstract is conceptually divided into the following three sections: Background, Methodology/Principal Findings, and Conclusions/Significance. However, the abstract should be written as a single paragraph without these headers. Do not include any citations in the abstract. Avoid specialist abbreviations."

## II. Review of Literature

As stated the abstract is usually the first thing people read before they start to read the whole article. Therefore, very careful attention must be devoted to writing it. Many of the ideas in this article were gleaned from my own reading of various journal articles. However, there are also a great number of good books available that also address the issue of abstract writing. Moreover, there is a plethora of literature review available abroad, to name a few, Khurshid, A. (1979) outlined the qualities that an abstract should possess and benefits that accrue from an abstract; Bhatia, V.K.(1993) analyzed use of language in abstracts; Fatiregun, A. A., & Asuzu, M. C. (2003) examined the relative advantage of structured abstracts over unstructured abstracts; David J Pierson (2004) offered several general writing tips; and provides annotated examples of well-prepared abstracts; Carlos Alberto Guimarães (2006) summarizes the main findings from research on structured abstracts; Chitaranjan Andrade (2011) focused on writing scientific abstracts; Papanas et al (2012) argues abstracts must aptly summaries the content of the study or presentation and avoid vague statements and poor style; Pooja (2016) abstracts are to be dressed to enthrall the readers; Sandeep B Bavdekar (2016) describes the appropriate titles for research papers; Hartley (2017) strongly recommended using the style of structured abstracts, but without the headings; Milind S. Tullu (2019) dealt with drafting a suitable “title” and an appropriate “abstract”; Edmond Sanganyado (2019) offers recommendations on reducing spin in abstracts.

It is evident that the researches documented on the problem on hand seem to be in nascent stage, especially in Indian context. Thus, this conceptual paper discusses various steps for writing each of an abstract’s components viz, title, author list, introduction, methods, results, and conclusions in addition to the style, formats and language of abstracts with lucid examples.

## III. Anatomy of abstracts

### a) Title

Title is the gateway to the contents of a scientific article (Sandeep, 2015). The title is the first part of any manuscript that is seen by the editors, reviewers, as well as readers (Pooja, 2016). It is also what appears on the contents page of the journal issue, and serves as a window to the research paper (Peh, 2008). Haggan (2003) observed a trend toward increasing informativeness of titles and referred to them as ‘*texts in miniature*’ which in this fast paced world of information overload “must add to the reader’s mental representation of the world. It is probably impossible to define a universal procedure for creating a good title—there is no equivalent ‘*structure method*’ for writing a title (Mack, 2012). Given the title’s prominence, the American Psychological Association, (APA, 2010) encouraged authors to exercise thought and creativity in selecting a title which will capture the reader’s attention and clearly inform the reader of the contents within.

### Format

The title should be centered at the top of page one and not italicized or underlined. The title is not a section, but it is necessary and important. The title should be short and unambiguous, yet be an adequate description of the work. A general rule-of-thumb is that the title should contain the key words describing the work presented. Remember that the title becomes the basis for most on-line computer searches - if your title is insufficient, few people will find or read your paper.

### Types of Titles

Table.1 showing types of titles

Title	Description
Declarative	These titles include what papers say (their main conclusions), not just what they cover.
Descriptive or neutral	Descriptive title only describes the subject of the paper and does not reveal the main outcome or conclusion
Interrogative (question form)	These titles indicate the subject of the paper in the form of a question that appeal to the curiosity of readers.

Source: Jamali, H.R. and Nikzad, M. (2011). Article title type and its relation with the number of downloads and citations.

Dewan & Gupta (2016) in an article ‘Writing Title, Abstract & Introduction’, articulated secrets of writing the title such as keeping it concise; specific; using a descriptive or a neutral title; appropriately spiced content; avoiding interrogative or declarative titles as well as acronyms/abbreviations in the title.

Therefore, the title should be attractive, and constructed with summary sentences, and phrases which might reflect its discriminative features without any exaggeration, and dogmatism (Warren, 2013).

### b) Authorship

Debates still continue on the sequencing of the authors in the title (Akman, 2013). However, the author who most substantially worked on the draft article and the underlying research becomes the first author. The others are ranked in descending order of contribution. However, in many disciplines, such as the life sciences, the last author in a group is the principle investigator—the person who supervised the work.

### c) Abstract

A well-prepared abstract enables readers (a) to identify the basic content of a document quickly, (b) to determine its relevance to their interests, and thus (c) to decide whether they need to read the document in its entirety. An abstract also facilitates free-text searching in an electronic environment and supports the application of controlled indexing vocabularies in access services. Since abstracts originally intended to accompany a primary publication may also be used by access services, these objectives should be considered from the outset (American National Standards Institute, 1996). In other words, feel free to hook readers with a *big picture* statement to open the abstract. Remember, many action editors will know very little about your topic area and, in some cases, your abstract will be the only thing that dictates whether or not you get through triage.

### i) Location

In a journal an abstract should be placed on the first page of each abstracted item between the title and the beginning of the text. In a separately published document the abstract should be placed between the title page and the text. Abstracts of separate chapters should appear under each chapter title on the first page of its text (NISO, 1996).

### ii) Length

The length of an abstract differs according to the type of document being abstracted and the ways the abstract is to be used. American National Standards Institute, 1996 suggested the length of the abstracts as follows:

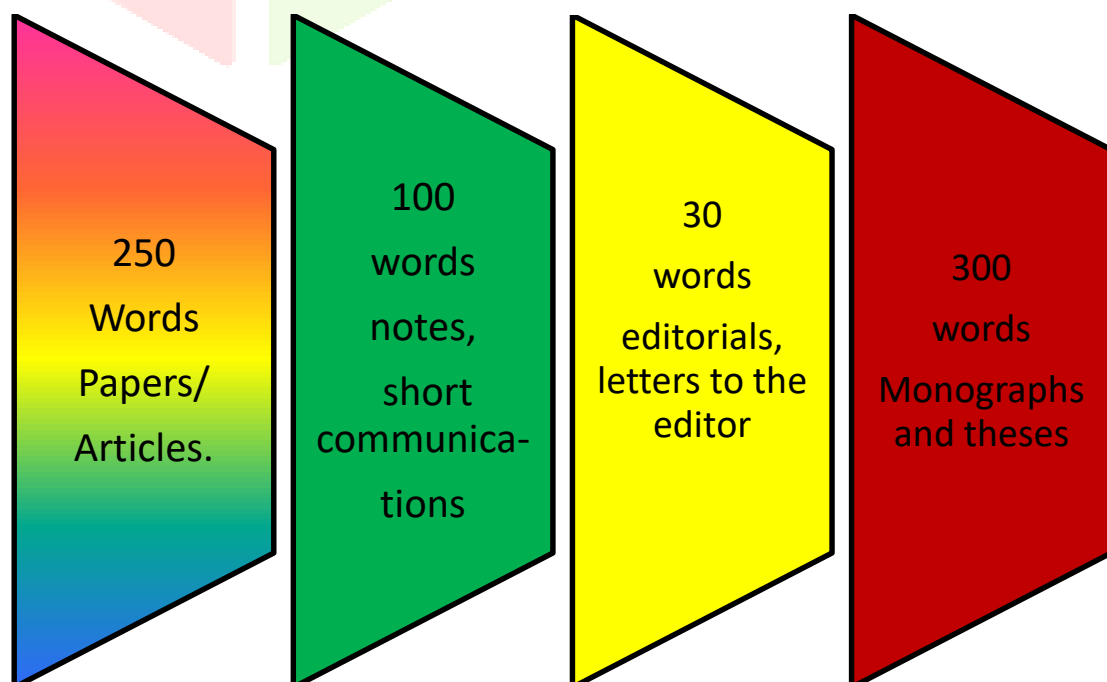


Fig.1 showing minimum length of abstracts

To avoid biasing retrieval results, an abstract's length and the number of keywords appearing in it should be appropriate to the potential usefulness of the document abstracted. Be sure to check journal guidelines for abstract length.

### iii) Typical structure of a research paper

Table.2 showing structure of research paper

Introduction	State why the problem you address is important State what is lacking in the current knowledge State the objectives of your study or the research question.
Methods	Describe the context and setting of the study Specify the study design Describe the 'population' Describe the sampling strategy Describe the intervention (if applicable) Identify the main study variables Describe data collection instruments and procedures Outline analysis methods.
Results	Report on data collection and recruitment (response rates, etc.) Describe participants (demographic, clinical condition, etc.) Present key findings with respect to the central research question Present secondary findings (secondary outcomes, subgroup analyses, etc.).
Discussion	State the main findings of the study Discuss the main results with reference to previous research Discuss policy and practice implications of the results Analyze the strengths and limitations of the study Offer perspectives for future work.

Source: Thomas V. Perneger and Patricia M. Hudelson (2004) *Writing a research article: advice to beginners*.

### iv) Style of abstracts

An abstract must be intelligible to a reader without reference to the document it represents. When writing an abstract, always use the past tense since you are giving a summary of what was done. One exception is if you mention future directions in your concluding statement. For clarity, avoid using footnotes, lists of references, or references to the text of the original document. Retain the balance and emphasis of the original documents, except in a slanted abstract. Be concise, fulfill content requirements, but do not be cryptic or obscure. For coherence, use transitional words and phrases.

### v) Types of abstracts

There are four types of abstracts

- i) An informative abstract extracts everything relevant from the paper, such as primary research objectives addressed, methods employed in solving the problems, results obtained, and conclusions drawn. Such abstracts may serve as a highly aggregated substitute for the full paper.
- ii) An indicative or descriptive abstract rather describes the content of the paper and may thus serve as an outline of what is presented in the paper. This kind of abstract cannot serve as a substitute for the full text (Sher Singh, 2014).
- iii) Structured abstracts are with distinct, labeled sections viz, Introduction, Methods, Results, Discussion for rapid comprehension.
- iv) Unstructured abstracts are where no labeled sections but same information is included.

## Examples – a) Informative abstract

Table.3 showing example of Informative abstract

Key Points	Abstract
Background	<p><b>Metalinguistic awareness</b> contributes to effective writing at university. Writing is a meaning-making process where linguistic, cognitive, social and creative factors are at play. University students need to master the skills of academic writing not only for getting their degree but also for their future career. It is also significant for lecturers to know who our students are, how they think and how we can best assist them. This <b>study examines</b> first year undergraduate Australian and international engineering students as writers of academic texts in a multicultural setting at the University of Adelaide. A <b>questionnaire and interviews</b> were used to collect data about students' level of metalinguistic awareness, their attitudes toward, expectations for, assumptions about and motivation for writing. The preliminary results of the research show that students from different cultures initially have different concepts about the academic genres and handle writing with different learning and writing styles but those with a more developed metalanguage are more confident and motivated. The <b>conclusion</b> can also be drawn that students' level of motivation for academic writing positively correlates with their opinion about themselves as writers. Following an in-depth multidimensional analysis of preliminary research results, some recommendations for writing instruction will also be presented (200 words)</p>
Purpose and aim	
Methods Results	
Conclusions	

## b) Descriptive abstract

Table.4 showing example of Descriptive abstract

Key Parts	Abstract
Background	<p>The opportunity to <b>design and deliver short programs</b> on referencing and avoiding plagiarism for transnational UniSA students has <b>confirmed the necessity</b> of combating both the "all plagiarism-is-cheating" reaction and the "just-give-them-a-referencing-guide" response. The notion of referencing is but the tip of a particularly large and intricate iceberg. Consequently teaching referencing is not adequate in educating students to avoid plagiarism. In this presentation I will use <b>the transnational teaching experience</b> to highlight what educating to avoid plagiarism entails. (56 words)</p>
Purpose and aim	
Particular focus of paper	

Source: *Writing an abstract, Learning Guide* © 2005 The University of Adelaide

## c) Structured abstract

Table.5 showing example of structured abstract

Background	Across many domains, research has shown that students often fail to select and apply appropriate conceptual knowledge when solving problems. Programs designed to support monitoring skills have been successful in several domains.
Purpose (Hypothesis)	Critical conceptual knowledge in statics appears to be cued by paying attention to the bodies that are present in a problem, as well as to which ones are interacting and how. The research question addresses whether students can be induced to think about the bodies present, and whether focusing on bodies improves problem solving performance
Design (Method)	Using a pre/post-test design, written and verbal protocols were obtained for students solving problems before and after instruction. During instruction all students saw the same set of examples and corrected answers, but only the experimental group was asked questions designed to promote body centered talk. Solutions and protocols were coded and analyzed for frequency of body centered talk and solution quality.
Result	The experimental group showed statistically significant increases in relevant body centered talk after instruction. Both groups improved their ability to represent unknown forces in free body diagrams after instruction, with the experimental group showing a greater, but not statistically significant, improvement. However, for both groups, the error rate in representing unknown forces at an interaction was significantly lower when a student referred to the bodies in the particular interaction.
Conclusion(s)	Problem solving in conceptually rich domains can improve if, in addition to acquiring conceptual knowledge, students develop strategies for recognizing when and how to apply it.

Source: *The Research Journal for Engineering Education (2010)- Instructions for Structured Abstracts*

## d) Unstructured abstract

The First destination survey of new graduates provides only a snapshot of graduate employment. **(Problem Statement)**. This longitudinal study explores more fully the career pathways taken by undergraduates from two programs and examines which skills acquired at University contributed to successful employment and development of their careers. **(Topic for research)** It was found that 99% of respondents made a successful transition from higher education to the workplace, with 56% in a job related to their first degree subject. Career pathways were diverse and half of graduates undertook further study/training at various stages to improve their career prospects. **(Findings)** Skills identified as most useful were oral and written communication, team working, personal organisation, self-motivation and subject knowledge. **(Conclusions)** Areas recommended for curriculum development were subject specific practical skills, information technology and additional support with career advice and guidance **(Argument)**. (200 words). Source: *Shah, Pell & Brooke (2004)*.

## vi) Verb Tense of abstracts

- Oster (1981) proposed the following principal hypotheses about the use of tense: 1. The Present Perfect is used to claim generality about past literature. The Past tense is used to claim non generality about past literature.
2. The Past tense is used when it refers to quantitative results of past literature that are non-supportive of some aspects of the work described in the technical article. The Present tense is used when it refers to quantitative results of past literature that are supportive or non-relevant.
3. The Present Perfect tense is used to indicate the continued discussion of some of the information in the sentence in which Present Perfect tense occurs.

In a nutshell, the verb tense of abstracts can be summarized as follows:

Table.6 showing example of verb tense of abstracts

Type of information	verb form
For background details	Present Tense
Describing the research activity	Simple past tense, present perfect tense.
Describing methods	Simple past tense
Reporting results	Simple past tense
For discussions	Present tense to explain significance of results
Stating conclusions	Present Tense

Source: Michael Azariadis (2017) writing abstracts.

### a) Using Key words (subject terms)

At the end of the abstract keywords are usually presented. Most frequently from 3 to 5 keywords are presented, which include phrases, or acronyms. Undoubtedly, in some cases there can be more of them, however it is obvious that only two keywords, is too little (Vincentas (2019).

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. They are used for indexing in databases and as search terms for readers.

## IV. Conclusion

This article attempted to summarize the vetted and trusted resources to make an effective abstract. It is demonstrated that an abstract is a written synopsis, usually of a full article or conference presentation. Abstracts not only serve as a key to understanding fully the arguments of the original articles (Swales, 1990), but also provide readers with some language preparation for the full texts (Cross & Oppenheim, 2006).

Since abstracts include very limited information of an article, they convey only part of the originality and the relevance of the research study. Indeed, the works of Šauperl, Klasinc & Lužar (2008) and Jamar, Šauperl & Bawden (2014) show that the abstract should follow a structure but that the authors seldom follow such recommendations. In this direction, the present analogy could be an authoring tool for writing effective abstracts. After all, a well drafted abstract will help the researcher to win half the battle.

## V. References

- [1] Akman, T. 2013. Selection of Authors, Titles and Writing a Manuscript abstract. *Turkish Journal of Urology*, 39(Suppl 1), 5.
- [2] Andrade, C. 2011.. How to write a Good Abstract for a Scientific Paper or Conference Presentation. *Indian Journal of Psychiatry*, 53(2), 172.
- [3] Atanassova, M. Bertin, V. Lariviere 2016. On the Composition of Scientific Abstracts, *Journal of Documentation*, Vol. 72, issue 4.
- [4] Bavdekar, S. B. 2016. Formulating the Right Title for a Research. *Journal of the Association of Physicians of India*, 64(2), 53-56.
- [5] Bhatia, V.K. 1993. Analyzing Genre: Language Use in Professional Settings; Longman Publishing: New York, NY, USA.
- [6] Chris Mack 2012. How to write a Good Scientific Paper: Title, Abstract, and Keywords. *Journal of Micro/ Nanolithography, MEMS, and MOEMS* 11(2).
- [7] Edmond Sanganyado 2019. How to write an honest but effective abstract for scientific papers. *Scientific African*. Vol.6.
- [8] Fatiregun, A. A., & Asuzu, M. C. 2003. Structured and unstructured Abstracts in Journal Articles: A Review. *The Nigerian Postgraduate Medical Journal*, 10(3), 197-200.
- [9] Jamali, H.R. and Nikzad, M. 2011. Article Title Type and its Relation with the Number of Downloads and Citations, *Scientometrics*, 88 (2):653-661.
- [10] Klimova, B. F. 2013. Common Mistakes in Writing Abstracts in English. *Procedia-Social and Behavioral Sciences*, 93, 512-516.
- [11] Khurshid, A. 1979. On Abstract and Abstracting. *Annals of Library and Information Studies (ALIS)* Vol.26, 1-4.
- [12] Lamanuskas Vincentas 2019. Scientific Article Preparation: Title, Abstract and Keywords. *Problems of Education in the 21st Century*. 77(4):456-462.
- [13] Laura Riordan 2015. Mastering the Art of Abstracts. *The Journal of the American Osteopathic Association*, Vol. 115, 41-45.
- [14] NISO (1996) Guidelines for Abstracts. American National Standards Institute. Bethesda, Maryland, U.S.A.
- [15] Nurhayati.S.S. 2017. Verb Tense Analysis of Research Article . *Progressive*, 12(2).
- [16] Papanas, N., Georgiadis, G. S., Maltezos, E., & Lazarides, M. K. 2012. Writing a research abstract: eloquence in miniature. *Int Angiol*, 31(3), 297-302.
- [17] Peh WC, Ng KH 2008 Title and title page. *Singapore Medical Journal*.;49:607-8.
- [18] Shah A., Pell, K. & Brooke, P 2004. Beyond First Destinations: Graduate Employability Survey, *Active Learning in Higher Education*. Volume 5 issue 1, pp.9-26.
- [19] Swales, J.M.1990 **Genre Analysis**; Cambridge University Press: Cambridge, UK
- [20] Thomas V. Perneger and Patricia M. Hudelson 2004. Writing a Research Article: Advice to Beginners. *International Journal for Quality in Health Care*. Volume 16, Number 3: pp. 191–192.
- [21] Tullu, M. S. 2019. Writing the Title and Abstract for a Research paper: Being Concise, Precise, and Meticulous is the Key. *Saudi journal of anaesthesia*, 13(Suppl 1), S12.