Paper Writing and Report Generation

Lesson – 6

Content

- **What is a Report**
- **Types of Report**
- **Research Report**
- **Components of a Research Report**
- **Title**
- **Abstract**
- **Abstract – Inclusion and Exclusion**
- **Introduction**
- **Body – Review the Parts of the Body**
- **Literature Review – Significance**

- **Literature Review – Steps**
- **Research Methods**
- **Results**
- **Discussion**
- **References**

What is a Report

- A report is a written document on a particular topic, which conveys information and ideas and may also make recommendations. Reports often form the basis of crucial decision making. Inaccurate, incomplete and poorly written reports fail to achieve their purpose and reflect on the decision, which will ultimately be made.

- A good report can be written by keeping the following features in mind:

  √ All points in the report should be clear to the intended reader.

  √ The report should be concise with information kept to a necessary minimum and arranged logically under various headings and sub-headings.

  √ All information should be correct and supported by evidence.

  √ All relevant material should be included in a complete report.

Types of Report

General types of reports are –

1. **Informational**
   - Inform or instruct – present information.
   - Reader sees the details of events, activities or conditions.
   - No analysis of the situation, no conclusion, no recommendations.

2. **Analytical**
   - Written to solve problems.
   - Information is analyzed.
   - Conclusions are drawn and recommendations are made.

3. **Persuasive**
   - An extension of analytical reports - main focus is to sell an idea, a service, or product.
   - Proposals are the most common type.

- **Incident Report:** A report describing how close you are to completing something you planned.

- **Accident Report:** A report describing how many goods or services were sold, and the reasons for any differences from the plan.

- **Sales Report:** A report on what has happened in a place, and how close your organization is to finishing construction.

- **Progress Report:** An academic report on how and why something has changed over time.

- **Feasibility Study/Report:** A report describing something that has happened.

- **Recommendation Report:** A report on how practical a proposal is.

- **Site:** A report on what your organization should do.

- **Case Study:** A report describing how someone was hurt or something was damaged.

- **Periodic Operating Reports:** To monitor and control production, sales, shipping, service, etc.

- **Situational Report:** To describe one-time events, such as trips, conferences, and seminars.

- **Investigative/Informational:** To examine problems and supply facts – with little analysis.

- **Compliance:** To respond to government agencies and laws.

- **Justification/Recommendation:** To make recommendations to management and become tools to solve problems and make decisions.

- **Yardstick:** To establish criteria and evaluate alternatives by measuring against the 'yardstick' criteria.

- **Research Studies:** To study problems scientifically by analyzing a problem, developing hypotheses, collecting data, analyzing data, and drawing conclusions.

Research Report

- Research is the systematic investigations into study of a natural phenomena or materials or sources or existing condition of the society in order to identify facts or to get additional information and derive new conclusions. It is a production process, which needs a number of inputs to produce new knowledge and application of new and existing knowledge to generate technology that ultimately may generate economic prosperity of a nation. Simply, a research paper/report is a systematic write up on the findings of the study including methodologies, discussion, conclusions etc. following a definite style.

Components of a Research Report

Figure 1 The 'Hourglass Model' (light-grey parts) and the 'King Model', which covers an extended set of parts in a typical paper's structure
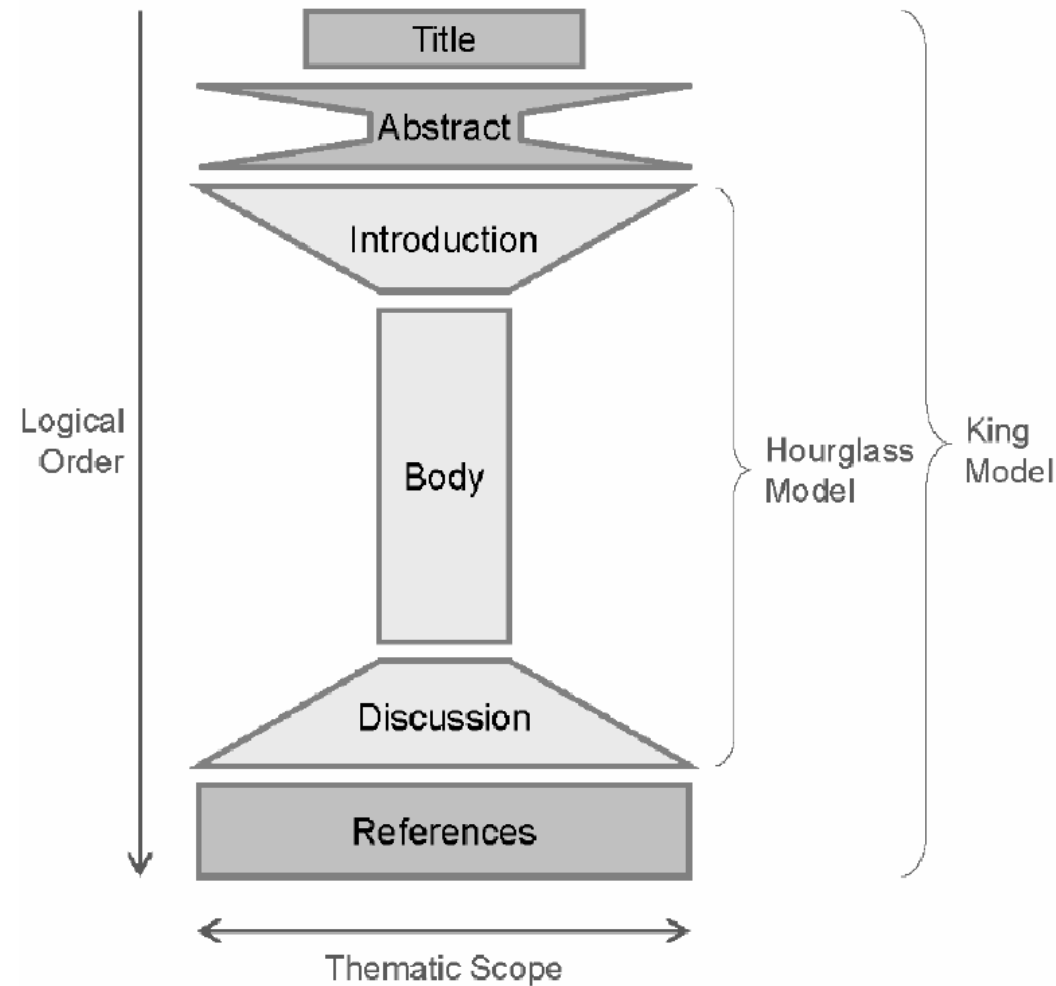
Source: Based on Swales (1993)

Title

- The title is the part of a paper that is read the most; it is usually read first and most often,it is the only thing that is read.

- Thus, according to Peat et al. (2002), effective titles

  √   identify the main issue of the paper;

  √   begin with the subject of the paper;

  √   are accurate, unambiguous, specific and complete;

  √   do not contain abbreviations unless they are well known by the target audience, e.g.HTML or CPU in titles of computer science papers or ADHD in titles of psychology papers;

  √   specific enough to describe the contents of the paper, but not so technical that only specialists will understand

Title should allow the reader the most succinct summary of the main 'players' in the experiment and the character of their relationship to each other

Abstract

- Basically, an abstract comprises a one-paragraph summary of the whole paper. Abstracts have become increasingly important, as electronic publication databases are the primary means of finding research reports in a certain subject area today. Hence, everything of relevance to potential readers should be in the abstract, everything else not.

- An informative abstract extracts everything relevant from the paper, such as 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

Abstract – Inclusion and Exclusion

Inclusion

► *Motivation:* Why do we care about the problem and the results?

► *Problem:* What problem is the paper trying to solve and what is the scope of the work?

► *Solution:* What was done to solve the problem?

► *Results:* What is the answer to the problem?

► *Implications:* What implications does the answer imply?

Exclusion

► Information and conclusions not stated in the paper

► References to other literature (although this may vary by journal)

► The exact title phrase and illustrative elements such as tables and figures

Introduction

- A reader of the introduction should be able to answer the following questions, although not in any depth.
    - √   What is the research about?
    - √   Why is it relevant or important?
    - √   What are the issues or problems?
    - √   What is the proposed solution or approach?
    - √   What can one expect in the rest of the research?
    - √   Tell the reader what the problem is, what question you will try to answer, and why it is important. It might be important for practical reasons or for theoretical (or methodological)reasons having to do with the development of a scholarly discipline. Don't neglect either type of reason.
    - √   Avoid editorialization, personal opinion and judgmental statements
    - √   Hypotheses are usually stated formally in the closing paragraph of the introduction.

Body – Review the Parts of the Body

- The body of a paper reports on the actual research done to answer the research question or problem identified in the introduction. It should be written as if it were an unfolding discussion, each idea at a time (Dees, 1997). Often, the body comprises several sections and subsections, whereas structure, organisation and content depend heavily on the type of paper, publication outlet, publisher and the creativity of the authors.

- In empirical papers, the paper body describes the material and data used for the study, the methodologies applied to answer the research questions and the results obtained.

- Case study papers describe the application of existing methods, theory or tools. Crucial is the value of the reflections abstracted from the experience and their relevance to other designers or to researchers working on related methods, theories or tools.

- Methodology papers describe a novel method which may be intended for use in research or practical settings (or both), but the paper should be clear about the intended audience.

- Theory papers describe principles, concepts or models on which work in the field (empirical, experience, methodology) is based; authors of theoretical papers are expected to position their ideas within a broad context of related frameworks and theories.

- Generally, the body of a paper answers two questions, namely how was the research question addressed (materials, methods) and what was found

Literature Review – Significance

- Demonstrate your familiarity with the topic and scholarly context

- Develop a theoretical framework and methodology for your research

- Position yourself in relation to other researchers and theorists

- Show how your research addresses a gap or contributes to a debate

Literature Review – Steps

- **Search for relevant literature**

- **Evaluate sources**

- **Identify themes, debates and gaps**

- **Outline the structure**

- **Write your literature review**

Research Methods

- What methods are used (observation, interview, document analysis, visual data (movies, photos) etc.), what materials are used for conducting a research, how data is collected and analyzed.

- What / Who is studied – how many objects are studied, how the objects have been selected.

- Describe, what you actually did – explanation of conduct of research in more detail

- Procedure – how the research is conducted

- Acknowledge the boundaries of used methods

Results

- This is (obviously) where you present the results of your experiment to the reader.

- The results section is also written in the past tense.

- The result section summarizes the data and the statistical treatment of them. If the data are relatively simple, they may be reported entirely in text without the use of TABLES or FIGURES.

- Summarize the main idea of your findings and report them whether or not your hypothesis(es) have been confirmed. Present the results in the same order as you have made your predictions (hypotheses) in the introduction and do so in simple sentences.

- Do not discuss the implications, interpretations, or theoretical significance of your results in the results section.

Discussion

- The discussion part is sometimes presented as 'Discussion', 'Discussion and Conclusion', or simply 'Conclusion'. This may contain the following.

- A presentation of background information as well as recapitulation of the research aims of the study.

- A brief summary of the results, whereas the focus lies on discussing and not recapitulating the results.

- A comparison of results with previously published studies.

- Conclusions or hypotheses drawn from the results, with summary of evidence for each conclusion.

- Proposed follow-up research questions and outlook on further work.

References

- Embedding the own work in related literature is one of the essential parts of research writing. This is achieved by citing related work within the text and by listing all cited references at the end of the paper. Different publishers require different formats or styles for citing a paper in the text and for listing references.

- Variations of the referencing systems mentioned above are used in most of the common style guides, for instance American Psychological Association (APA) style (American Psychological Association, 2003), Chicago style (The University of Chicago, 2010), Council of Biology Editors (CBE) style and Modern Language Association (MLA) style (Gibaldi, 1995).

- In computer science, the most widely used styles are variations of the number system, e.g. the style used by Springer Verlag in the Lecture Notes series, the style used by the Association for Computing Machinery (ACM) Press and the style guides issued by the IEEE Computer Society for most of their publications.

- Regardless of the citation style, there are two basic rules for the list of references: (1) every cited source must be listed and (2) every listed source must be cited.

End of Lesson 6