



INFORMATION SKILLS

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BETTER QUALITY AND GREATER AVAILABILITY OF INFORMATION WOULD LEAD TO

- Improved allocation of resources
- More informed decision making

If access to information would not have been included in the development agenda we risk:

- Poor decision making
- Wasted money and effort
- Reinventing the wheel





ACADEMIC/PROFESSIONAL SKILLS

Academic and professional skills are the skills that every academic trained professional should master.

They are discipline independent and can be used in many different professional settings.

Examples of academic and professional skills are analytical thinking, academic writing, information skills and data management.

WHY ACADEMIC / PROFESSIONAL SKILLS

Strengthen the ability to execute scientific research to become a qualified researcher:

- Be able to present scientific research.
- Find evaluate and summarize the most important and up-to-date scientific literature to support research and organize this.
- Understand why scientific research is structured as it is.
- Be able to structure a research proposal according academic expectations.



INFORMATION NEEDS RESEARCHERS

- to spend time solving problems that may already have solutions,
- claiming originality for what has already been discovered and,
- making errors that have been well-documented elsewhere,
- papers which result from research undertaken without access to needed information are probably unacceptable for publication in the highly rated refereed journals.



INFORMATION NEEDS LECTURERS

- Gaining an overview of the existing knowledge on a given topic = finding related research papers to extend your knowledge.
- Updating curriculum.
- Learning of new developments.
- Solving topical problems.
- Stimulation of students.
- Comprehend the information in lecture materials and research papers.
- Critically evaluate this information.



WHY A LITERATURE REVIEW

When proposing a research project:

1. to establish its **originality**
 - prove that the proposed work has not been done before;
2. to place the proposed research in **context** (related work);
 - how it fits in the “big picture”
 - related work done by others that influence the choices made for this research
3. to compare and justify the choice of **research methods**
 - methods used in similar studies
 - why some methods are preferred or appropriate in this research



TYPES OF JOURNAL ARTICLES

1 Research Article Describes an **original** investigation, method, or procedure. Can be specific and limited

- Dobos, E.; Micheli, E.; Baumgardner, M. F.; Biehl, L.; & Helt, T. 2000. *Use of combined digital elevation model and satellite radiometric data for regional soil mapping. Geoderma* **97**(3-4):367–391

2 Review Article Summarizes a set of research articles; surveying the state-of-art in a particular field. The title may include words like “review”, “summary”, or “overview”.

- McBratney, A. B.; Odeh, I. O. A.; Bishop, T. F. A.; Dunbar, M. S.; & Shatar, T. M. 2000. *An **overview** of pedometric techniques for use in soil survey. Geoderma* **97**(3-4):293–327

3 Opinion A scientific **editorial**, either by the journal editor or an invited contributor

- Basher, L. R. 1997. *Is pedology dead and buried? Australian Journal of Soil Research* **35**:979–994



RANKING OF JOURNALS: IMPACT FACTOR IF

Journal Impact Factor is from Journal Citation Report (JCR), a product of Thomson ISI (Institute for Scientific Information); it is a measure of the frequency with which the **"average article"** in a journal has been **cited** in a given **period of time**.

A = the number of times articles published in 2010-2011 were cited in indexed journals during 2012

B = the number of articles, reviews, proceedings or notes published in 2010-2011

$$\text{impact factor 2012} = A/B$$

Always discipline dependent



RESEARCHER OF THE FUTURE

“The next generation of researchers will need to be able to do much more than research their own specialism.

They will need to be effective communicators, work in teams, manage other people, see the bigger picture and develop a multidisciplinary approach to their work.

Dr. Douglas Halliday, Durham University