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Supplementary Skills for Built Environment Researchers

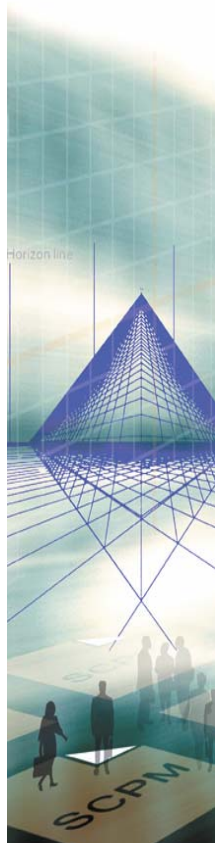
Guide to paper and report writing skills

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Introduction

This guide to paper and report writing skills for Built Environment researchers is prepared to provide some tips on how to enhance your skills and competence during your course of study. This is an outcome of a project funded by an Educational Development Grant through Centre for Education in the Built Environment (CEBE). The project, called SuSi-BER (Supplementary Skills for Built Environment Researchers), was conducted within the Research Institute for the Built & Human Environment (BuHu), the University of Salford.

There have been repeated calls for enhancing research and supplementary skills of the built environment researchers. Few would disagree that deepening specialised knowledge-base and wider skills of researchers in a variety of disciplines are prerequisite for developing successful leadership in higher education, the public sector and industry. We believe that, there is ample room for improvement in developing supplementary skills for quality research and researchers in the built environment. Further, as the modern society is changing in an unprecedented pace, you as an individual might realise the need to develop skills and competencies on a continual basis.

In this context, the project has been focusing on creating a foundation for creating, developing, and exploiting knowledge of supplementary skills for various activities of the built environment researchers. The project has identified and classified generic and transferable skills under the following six broad themes.

- paper / report writing skills;
- communication and presentation skills;

- personal development, professional competence, judgement and confidence;
- planning, organising, and time management;
- critical thinking and problem solving; and,
- team work and leadership.

There would be a guideline for each theme and an overall guideline for developing supplementary skills. The guides are written for everyone who is engaged in the Built Environment research, particularly postgraduate researchers reading for academic qualifications, e.g. MSc or PhD.

There is a wealth of information on each topic already available elsewhere, be it written or embedded in practice at various institutions. Due to space limitations, this guide does not provide comprehensive and exhaustive advice on each topic. Instead, this guide will provide some examples and practical tips that can help you to understand what developing each skill entails. It is hoped that this generic guide will stimulate you to think or rethink your chosen course of study as not just acquiring a qualification or passive learning experience of gaining some specialist knowledge on a research topic, but also as a process of developing you as a competent professional who can solve problems and contribute to the body of knowledge during the course of your study as well as for your future career.

This guide is thus intended to provide a foundation for which you can start with and as a common frame of reference to facilitate knowledge sharing among fellow students. For those of you who are interested in exploring further on particular topics, a reading list is provided at the end of each guide. Also remember that these supplementary skills need practice and you will learn through experience as well as reading some good materials. Like learning craft skills, we suggest that, as a starter, you emulate how other model people do and adapt their style and behaviour to suit your particular needs and style.

Developing paper & report writing skills

We all write things in our daily life, be it a simple memo, shopping list, personal diary entry, journal paper, letter of complain, office

memorandum, industry reports, and highly academic journal paper. This is a common form of human communications so permeated that sometimes we take it for granted. That said, this guide concerns skills on writing papers and reports as an outcome of our enquiry. Writing is the way you publicise your enquiry. In this regard, there are two key factors you need to consider while you produce papers or reports:

- Who are your intended audiences?
- Are you aware of the conventions or guidelines that you have to follow?

Visit websites for collecting relevant information on the requirements of your target conference or journal papers. The target conference or journal's website contains some instructions for authors submitting papers. For example, manuscript submission requirements for Construction Management and Economics can be found from:

<http://www.tandf.co.uk/journals/authors/rcmeauth.asp>

An appropriate format for your writing depends on the audiences you intend to address. If you write primarily for the academic audiences, it is likely that you have to adhere to a conventional academic journal format. For non-academic audiences, other formats may well communicate better. The purpose of writing may differ, but in general it is to inform and influence several different audiences. Thus, it is unlikely that all the audiences will find the style of report or paper appealing to the same degree. Even though some audiences may have less strict rules, you have to show your professionalism and achieve what you intend to do.

In general, you have to follow certain strict rules when you write for academic audiences. There is an increasing acceptance on unconventional formats especially in phenomenological and ethnographic studies; however, if you are writing traditional scientific academic papers, you have to be ready to meet the expectations and conventions of those audiences. Typically journals have their requirements for potential contributors at the end of each journal issue (and/or in their websites). Similarly, requirements for submitting conference papers are announced by the conference organisers in the call for abstracts. The more you adhere to their

requirements, the more likely your paper gets accepted!

Although requirements for a particular journal or conference vary, you will need to answer the following questions:

- Is this an appropriate journal/conference for my paper? (Ask your supervisor if in doubt).
- Is my paper within the word limits of the journal/conference?
- Did I follow the journal/conference's instructions on referencing?
- Is my title reflecting the main arguments of my paper?
- Did I follow the journal/conference's instructions on spacing, numbering of chapters, tables, figures, and paging?
- Are there any grammatical, typographical, or logical errors? (Perhaps you and your colleagues can help each other).

Writing as a learning process

There are abundant sources of tips and guidelines how you can learn to write, but this guide is not written for repeating the same advice you can find in those books and texts. You're strongly encouraged to consult those books if you are in need of improving writing skills *per se*. Here what we would like to highlight is writing something (or anything) regularly can help you to improve your learning skills, e.g. to construct arguments in a logical manner, to acknowledge criticism and weaknesses, and to synthesise ideas and claims put forward by other authors.

Writing something regularly during your course of study will help you to make your arguments sharper and facilitate your self-reflection on the process, content, direction, or context of the study. With similar reasons, your supervisor may also encourage you to write and submit reports prior to regular meetings, during which you can discuss your progress and direction of the study. Remember that your supervisor cannot comment on blank sheets, so do not delay writing until your final year in which you have to write your chapters!

As one PhD student comments, 'Write extracts and get peers/supervisor to review.' It is always good to check whether you can make your readers understand what you want to tell them. One reality check can be asking your family members or friends to read your paper and check whether your paper makes sense. Even though they may not be an expert in your chosen area of study, they can provide some external views and insights on your writing. You may also organise peer group which can share ideas and help each other proof-read or provide constructive criticism.

Writing as communication

Writing is also an important vehicle which enables you to communicate with others. For this, among others, it is useful to make clear what the purpose of your communication is. As depending on the purpose in any writing the acceptable conventions vary. You may intend to produce a formal piece of writing such as an annual report, a business plan, a journal article or a dissertation. In other cases, you're producing less formal one such as essays, office memoranda, or notes. Acceptability of certain forms, styles, and the amount of words would also vary depending on the purpose. It is always prudent to check whether there is any regulation or recommended guideline for your writing.

Readers who are interested in learning how to select adequate structure, style, and format in different circumstances could refer to various specific references depending on the purpose of writing (e.g. writing for international commerce, writing for engineering, or writing for design professionals). For writing a substantial research report, there are subtle differences depending on who your primary audience is and the research paradigm you're operating in. Chapter 15 of Robson (2002) provides good advice on reporting on the enquiry in different circumstances.

For readers who need generic references on writing, refer to the examples shown in the further reading list of this guide.

Regardless of your purpose of writing, there are benefits of having some sort of structure. Loose or unconventional structures are increasingly

tolerated in both academies and business world. However, don't risk leaving your audience with the impression that you don't know what you're saying or your ideas are simply too sloppy. In most cases, clarity is one of the keys to effectively communicating with others.

You may mainly use verbal texts in papers or reports to communicate with others, but as an old adage says 'one picture may be worth a thousand words.' An appropriate use of visual techniques to produce graphs and tables can help the readers understand your arguments more clearly. If you need to improve visualisation skills, do so early in your course of study. Mastering some ICT tools takes some time (often longer than you thought) and practice. Check which software packages are available within the university and, if you require a specialist software package essential to your study, discuss availability with your supervisor as early as possible.

Predicting what entails in your study during the early days would be rather difficult. Read other theses, conference papers, journal papers, and reports and ask yourself whether you can use some software packages proficiently to produce similar effects. Also there may be some conventions you have to follow in order to draw certain types of graphs, diagrams, figures or maps (e.g. process maps, cognitive maps, rich pictures, or loop diagrams). Familiarise yourself with the conventions and the software package you're planning to use.

You may also need to learn jargons or terminologies that are accepted within the academic and industry community. Some words or phrases have different meanings when used in academia than everyday usage. Make sure that you understand the meaning of certain frequently used words or phrases and when to use them. Of course, you need to be 'multi-lingual' and adjust your tone and vocabulary if you have to deal with various audiences coming from a whole range of backgrounds.

Writing as a motivator

If you are writing a conference or journal paper for the first time, it is seldom the case that your paper will be accepted as it is. Don't be discouraged by the comments or feedback you

receive from your supervisor, referees, or colleagues. There are natural born writers, but most of us need to go through the same paper several times to revise until we produce its final version.

If it is a thesis or a long piece of writing, then it is doubtful you just write the whole chunk straight away. Therefore, it may be helpful to divide your thesis or the piece of writing into manageable parts. Once you start write some parts of it, you may have a better sense of how long it would take to complete the whole. Devise a realistic plan to complete your paper or report, and don't be surprised that it takes much longer than you thought. Writing a conference paper or report during your course of study can thus act as a motivator for you, as you may have to complete your writing by the deadline set by the conference organiser or your supervisor. It also helps you to meet peers from various universities (or even your future employer!). Submitting a number of journal papers to prestigious journals can also significantly enhance your employability within and beyond the university.

Develop your synopsis of your paper or report, and allocate certain time to develop your ideas. If you're using a word processor such as MS Word®, you may find it useful to use a document map (you may have to define and use styles) showing the structure of your paper. It is always easy to look at trees but get lost in a forest!

A Lecturer who recently completed his PhD used a mind map to identify which areas his thesis covers and does not cover, and also figure out the interrelationships between his key research areas. The mind map provided him with a focus so that he can develop his arguments bits by bits but at the same time maintain coherence of the whole thesis.

Writing as an outcome

Are you familiar with the department, school, university requirements for writing during your course of study? For example, you might need to write your learning agreement at an early stage and also you will have to submit your interim report between 12-15 months (if full time PhD) since the inception of your study. Your

thesis/dissertation at the end of your PhD or other postgraduate programmes will constitute a significant part of your study. Although these tangible outcomes are just part of your programme, they form an important part in evaluating whether you have achieved certain level of competence in your chosen field. Be aware that there are certain minimum requirements set down to which you have to adhere when compiling these interim or final documents. You must check those regulations before you start writing in order to ensure that you do not violate any part of them. As the regulations set out minimum requirements, you have to choose your own style and way of handling other non-specified items. Whatever style you choose, ensure that there is a consistency throughout your paper or report. Avoid mixing different styles, which can easily distract your readers. Perhaps you would like to check a couple of papers, reports, or theses and have a good understanding of what your reader may expect.

Increasingly studies in the Built Environment discipline are conducted in a multi-disciplinary and interdisciplinary environment. As such, sometimes you may have to understand the requirements may vary depending on from which perspective you are approaching to your research questions. Again, it is important to understand your target audiences. Attend workshops or other training programmes where you can meet some editors, educators, industrialist, and policy makers who may advise you on type of content, style, and evidence they are looking for. Also talk to your supervisor and colleagues and learn from their experiences. Unfortunately, there is no royal road to master craft skills such as writing without practice. Be ready to learn from what others say and develop your own style and skills.

Summary

This guide has reviewed importance of developing paper and report writing skills and presented four different but complementary perspectives on writing: a learning process; communication; a motivator; and an outcome. Throughout the guide it is emphasised that you have to understand who your audiences are and what requirements you are expected to follow.

You have to balance your creativity *vis-a-vis* discipline in your writing. An appropriate balance of the two will depend on the target audience group; hence, make yourself familiar with different requirements suitable for different audiences. Examples of good practice are abundant, but you can learn a lot from talking to your supervisor and colleagues. Regardless of its length and its audiences, writing something within academia is difficult but provides a rewarding experience. Students who would like to develop writing skills are strongly encouraged to consult other books including the ones in the further reading list. To help you identify which areas you may need to improve, a self-evaluation matrix is provided at the end of this guide. You may want to reflect upon your current level of competency and identify the gaps between the current status and the desired status for this important skill. Although it is designed to help you increase your awareness through self-reflection, you may also want to discuss your concerns with your supervisor and colleagues. Problems are easy to rectify when they are identified at an early stage and shared with others, who may gladly be your helping hands.

Further reading list

General books and guidelines on how to write papers and reports abound. You may speak to other researchers and supervisors to recommend some good books appropriate to your level. The following further reading list provides some general books on writing, which you can refer to:

Anderson, J. and Poole, M. (1998) *Assignment & Thesis Writing*, John Wiley & Sons, Brisbane.

Booth, W. C., Colomb, G. G. and Williams, J. M. (2003) *The Craft of Research*, The University of Chicago Press, Chicago.

Brusaw, C.T., Alred, G.J. and Oliu, W.E. (1993) *The Business Writer's Handbook*, St. Martin's Press, New York.

Chambers (1996) *Chambers Guide to Grammar and Usage*, Chambers, Edinburgh.

Dornan, E.A. and Dawe, C.W. (2004) *The Brief*

English Handbook, Pearson/Longman, New York.

The Economist (2001) *Style Guide*, Profile Books, London.

Kane, T.S. (1983) *The Oxford Guide to Writing*, Oxford University Press, New York.

Peck, J. and Coyle, M. (1999) *The Student's Guide to Writing: Grammar, Punctuation and Spelling*, MacMillian, London.

Robson, C. (2002) *Real World Research*, Blackwell Publishing, Oxford.

Appendix: Self-assessment for Report and Paper Writing Skills

Complete this Skills Audit now and compare progress each year during your PhD. Through this exercise, you would have opportunities to assess your awareness of both strengths and weaknesses. This will form the basis of your supplementary skills profile. Having completed this assessment of your supplementary skills, you may want to set targets for yourself and develop strategy to improve any aspect of the particular supplementary skills. You may want to identify sources of good practice or model which you would like to emulate or learn through experience. Some of the aspects might be discussed during workshop or training sessions in your school, research institute or university, so check with the pertinent websites or student handbook. You may also discuss with your supervisor(s), who can provide you with some help on whether there are opportunities for you to practice your skills.

Rate your ability according to the scale provided as below. As you go through each category, it is useful to think about how you can develop your skills on a short-term as well as long-term basis.

Rating	
4	Very well I feel confident in my ability to use this skill.
3	Satisfactory I am able to use this skill well, but my ability could be further improved.
2	Needs attention My ability to use this skill needs to improve.
1	Needs considerable attention I struggle with this skill and need to put in considerable efforts to develop this skill.

<i>Rate your ability against each statement below:</i>	Rating	Target	Improvement Strategy
I can use particular reporting styles appropriate for the purpose and target readership of the report (e.g. progress reports, industry reports, or thesis)			
I know generic requirements for writing conference and journal papers.			
I can construct coherent arguments and articulate ideas clearly to a range of audiences			
I can effectively defend research outcomes and choice of certain methodologies.			
I can take constructive feedback from peer reviews and incorporate them in producing a revision			
I can effectively use word-processing software packages for a long document (e.g. using style, page numbers, section breaks, or cross referencing)			
I can present my research in poster sessions			
I am able to contribute to Newsletters (electronic or hard copy)			
I am able to write introductory notes on my research topic to a non-expert audience			
I am able to use various techniques to visualise my concepts and ideas			
I can produce informative summaries on research topics			
I can produce a meeting memo from discussions with industrialists			
I can create and use tables, diagrams, graphs and sketches to illustrate arguments			

<i>Consider your responses above and rate your overall ability for paper/report writing skills</i>	Rating	Target	Improvement Strategy
Paper/report writing skills			

Any problems?

Things I need to improve

Action plan for the next review (set your own review frequency such as quarterly or yearly)