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UWA academic writing guidelines, policies and requirements

Statement of expectations on supervision and thesis writing ................................................................. 1
GRS webpages offering advice to supervisors about editing student’s work
http://www.postgraduate.uwa.edu.au/students/policies/expectations

University policy on the Use of editorial assistance by students ............................................................. 6

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GRS Resources and Training

Graduate Education Officers
The Graduate Education Officers (GEOs) are responsible for providing generic skills development and training to higher degree by research students across all disciplines at UWA
http://www.postgraduate.uwa.edu.au/students/resources/officers

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The GEOs run a program of seminars, workshops and other events. Details of these events can be found on the GRS Resources and Training pages, in the GRS Events Calendar
http://www.postgraduate.uwa.edu.au/students/resources
http://www.postgraduate.uwa.edu.au/students/resources/events
Details of upcoming events are sent to students and supervisors in monthly GRS newsletters
GEOs are also available to students and supervisors for individual consultation on matters such as improving academic writing and establishing effective supervisory relationships.

StudySmarter

Student Smarter Team
The STUDYSmarter team within Student Support Services provides a comprehensive program of academic skills development for all UWA students and work with staff from across the university to equip students of all capabilities with the language and learning skills required to achieve their academic potential.
StudySmarter run workshops, drop-in sessions and targeted consultations, and provide online and hard-copy study skills resources.
A list of the Studysmarter team is available here:

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StudySmarter support for improving written and spoken English
WriteSmart drop in sessions
http://www.student.uwa.edu.au/learning/studysmarter/writesmart/writesmart_drop-in
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Stanford Writing in the Sciences ...................................................................................................................... 14
  https://lagunita.stanford.edu/courses/Medicine/SciWrite-SP/SelfPaced/about
UC Irvine Coursera Writing a research paper ................................................................................................... 16
  https://www.coursera.org/learn/academic-writing-capstone

Online Resources for Supervisors

Supervising writing: helping postgraduate students develop as researchers .................................................... 19
  Lee & Murray. 2015. Supervising writing: helping postgraduate students develop as researchers.
  Innovations in Education and Teaching International. 52(5):558-570
The ABCDE of writing: Coaching high-quality high-quantity writing ............................................................. 32
  International Coaching Psychology Review. 6(2):237-249.

Online Resources for Students

Turbocharge your writing today ....................................................................................................................... 45
  https://www.nature.com/naturejobs/science/articles/10.1038/nj7354-129a
The write stuff .................................................................................................................................................. 47
Academic Phrasebank ....................................................................................................................................... 49
  Lists of concordant phrases used in academic writing. Organised according to the main sections of a
  research paper or thesis (top menu) or more general communicative functions of academic writing (left
  menu). The phrases are generic and content neutral, allowing student to use them directly, or adapt them
  to their needs.
  http://www.phrasebank.manchester.ac.uk/
Reverse Outlines ............................................................................................................................................... 52
  Strategy for improving student’s ability to revise the logic and flow of their own drafts. Promotes revision
  of higher order writing concerns before the editing and proofing stages of writing. The blog also has other
  useful writing strategies for higher degree students.
  https://explorationsofstyle.com/2011/02/09/reverse-outlines
Editing in this context has been defined as "the detailed and extensive correction of problems in writing style and of mechanical inaccuracy" (for example, "ghost writing") as opposed to providing general guidelines about problems with style and accuracy.

As early as possible in the candidature, the supervisor must assess the candidate's writing abilities. In the case of PhD candidates this must be an integral component of the confirmation process, which requires the candidate to provide a piece of written work. This should be of sufficient length to demonstrate writing proficiency and indicate the standard of the candidate's composition skills.

If the supervisor considers that further work is required in areas such as composition and grammar for the candidate to be successful in completing the PhD, the supervisor should then provide advice and assistance as to how an appropriate standard can be achieved. The supervisor needs to explain the level and extent of support the candidate can expect of them as supervisor. Such advice may include referral to the Learning, Language and Research Skills Services within Student Services. The supervisor should continue to monitor the candidate's progress in order to resolve any on-going difficulties.

Supervisors should advise students about structure, style, and general editing issues and should guide their candidates accordingly. It is appropriate for supervisors to undertake some editing tasks, but within limits. A thesis must express the candidate's voice. Writing is considered an important part of a higher degree by research, and any assistance with writing must be conducted as part of the overall learning process. Any additional assistance received by the candidate must be fully supported by continuous feedback from supervisors as part of the integral learning process. The integrity of the work relies on the thesis being demonstrably the candidate's work and must indicate that the candidate has the ability to write and argue with clarity.

Acquiring expertise in writing and editing is often seen as an important professional development for graduates. Graduate colleagues may be appropriate readers and editors of a thesis, and candidates should be encouraged to explore alternative avenues for assistance available from within their school and the wider University community.

Editing of theses by professional editors must be in accordance with the relevant policy of the National Council of Deans and Directors of Graduate Studies, (consult The Editing of Research Theses by Professional Editors ). In brief, the use of paid editorial assistance is acceptable provided that it is restricted to Standard D, Language and Illustrations and Standard E, Completeness and Consistency, as outlined in the Australian Standards for Editing Practice.

Further Information

- The University Policy on the Use of Editorial Assistance by Students
University Policy on: Use of Editorial Assistance by Students

Purpose of the policy and summary of issues it addresses

This policy outlines the general principles that govern the use of editorial assistance by students. The policy describes the limits on the use of editorial assistance by students and the difference in those limits with respect to tasks related to coursework and those related to research.

There is no distinction in this policy between editorial assistance which is paid and that which is not paid.

Definitions

In this policy,

“editorial assistance” is detailed correction of problems of writing style and mechanical accuracy. Types of editorial assistance include, but are not limited to: proof-reading; line editing; and detailed correcting or advising on language, style or substance of a specific piece of work;

“editorial intervention” is the act of requiring, as opposed to advising, a person to make specific editorial changes on a piece of work;

“ghost writing” is unattributed authoring in the form of re-writing or writing on behalf of another person; and

“the University” is The University of Western Australia.

Note: Giving general advice or guidelines about style and accuracy without marking up the work either electronically or on paper, is not editing and does not constitute giving editorial assistance.

Policy statement

1 The University’s commitment to students developing strong communication skills

1.1 The University is committed to ensuring that students are encouraged and facilitated to develop the ability and desire to communicate in English clearly, concisely and logically.

1.2 The University recognises -

- that acquiring expertise in writing and editing is an important professional development for students that must be monitored and assessed; and

- that use of editorial assistance by students can circumvent the need for them to develop their own skills and can mask their true levels of expertise.

2 Use of editorial assistance

2.1 Except as otherwise set out in this policy the University does not permit students to use editorial assistance.
3 Exceptions to the prohibition of the use of editorial assistance

3.1 The University recognises that exceptions to the prohibition of the use of editorial assistance apply in some situations.

3.2 The situations in which exceptions to the prohibition of the use of editorial assistance apply are limited to those outlined in this policy.

3.3 Where editorial assistance is permitted -

- the intent of the editorial assistance must be to develop the skills of the student;
- editorial intervention is not permitted; and
- ghost writing is not permitted.

3.4 Where editorial assistance is permitted and has been accepted by a student, the student must properly and clearly acknowledge this in the work.

4 Use of editorial assistance in a coursework unit

4.1 The University permits students to use editorial assistance, subject to procedural rules, in a particular unit at the discretion of the Unit Coordinator.

Show procedure

5 Use of editorial assistance in the preparation of theses for higher degrees by research

5.1 Higher degree by research students may, with the permission of their Coordinating Supervisor and subject to clauses 5.2 to 5.5 inclusive, accept editorial assistance in the preparation of their theses for examination.

5.2 The editorial assistance, paid or unpaid, must be restricted to Standard D, Language and Illustrations, and Standard E, completeness and consistency, as outlined in the Australian Standards for Editing Practice.

5.3 Use of paid editorial assistance must be in accordance with the relevant policy of the National Council of Deans and Directors of Graduate Studies.

Note: Refer to The editing of Research Theses by Professional Editors.

5.4 Subject to 4, higher degree by research students are not permitted to use editorial assistance in the preparation of assignments for coursework units.

5.5 Subject to 4, students engaged in the preparation of theses or dissertations other than for Higher Degrees by Research (e.g. for Honours, Graduate Diplomas and Master by Coursework and Dissertation) are not permitted to use editorial assistance.

6 Use of editorial assistance as developmental feedback

6.1 Provision of editorial assistance as developmental feedback by UWA staff whose role it is to provide such feedback, for example relevant academic staff, Learning Skills Advisors and Graduate Education Officers, is acceptable.

7 Provision of editorial assistance

7.1 Editorial assistance must be provided as developmental feedback and must not be given as editorial intervention or ghost writing.
7.2 In every case where editorial assistance has been provided -

- consequent revisions of the work must be undertaken by the student and not by the provider or another party;
- the student must acknowledge this assistance properly and clearly in the work.

7.3 Editorial assistance can be provided electronically, but not in the form of Track Change or similar amendments that can be accepted without the need for the student to evaluate and act on the suggestions.

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Graduates from UWA do not have to satisfy a test of English to enter further courses at UWA. However, graduates from other Universities, Australian or international, are not automatically assumed to have demonstrated English Language Proficiency despite that they may have studied some or all of the courses in English. Each application is considered individually. In most cases a formal English qualification is required. Applicants who wish to seek exemption from undertaking a test must request this explicitly.

All English test results must normally have been obtained within the past two years. Higher scores are required for applicants in certain faculties, as indicated below.

**Minimum requirements**

Qualification through WACE, TEE or equivalent
- Pass in English, English Literature, or English as a Second Language

GCE Ordinary Level English (GCSE and IGCSE)
- C6 or higher
- TOEFL (paper-based total) 570 with a Test of Written English (TWE) of no less than 4.5
- Scholarship applicants require 580, with 45 in the Test of Spoken English (TSE) and 4.5 in the Test of Written English (TWE)

IBT TOEFL (Internet-based test score)
- 82 with 22 for writing, 20 for speaking, 20 for listening, and 18 for reading

IELTS (Academic)
- 6.5 (no band lower than 6.0)

Cambridge Certificate of Proficiency in English
- C pass

Cambridge Certificate in Advanced English
- B grade

CELT Bridging Course
- Overall score of 70% with a minimum of 65% for each section
Pearson Test of English (PTE) (Academic)
Overall score of 64 with a minimum score of 64 in the Reading and Writing sections, 59 in the Speaking section and 54 in the Listening section. The Law School requires an overall score of 70 with a minimum score of 70 in each section.

Other
Other qualifications assessed on an individual basis

Australian Government visa regulations require higher English scores for applicants from some countries.

Special faculty requirements

Higher English scores are required for admission to higher degrees in some faculties at UWA:

Law
overall IELTS of 7.5, with a minimum score of 7.5 for reading and writing and a minimum of 7.0 for speaking and listening.

Education
overall IELTS score of 7.0, with a minimum of 6.5 in reading and writing.

Dentistry
overall IELTS score of 7.0, with a minimum of 6.5 in reading and writing.

Business
overall IELTS score of 6.5, with a minimum of 6.5 in reading and writing.
UWA provides you with a wide range of resources, training and professional development opportunities.

Your school allocates resources to you during your studies.

Other resources are available to all research students through the Graduate Research School or other central sources at the University such as the UWA Library, Student Services, Research Services and the Careers Centre. These resources include online materials, face-to-face lectures, seminars, workshops, and individual consultations. Many of these events are listed in the GRS Calendar of Events.

You can also access a range of external resources, including a series of online courses offered by UWAextension

A range of training and professional development opportunities are listed below.

Writing and communication skills development

Research Proposal

Literature review

Academic writing and thesis writing

Communicating

Writing papers

- Publication prizes: Annual prizes for the best research student publications from each faculty
- UWA Library: Where to publish workshop

Research skills development

Getting started

- GRS Research skills workshops: Kickstart your research, Conceptualising your research

Software training and support

Statistical support

- UWA Centre Applied Statistics: Statistics consultancy and software training courses

Data management and research metrics
- UWA library toolkits: Research data management and Open access
- 23 (research data) things: Self directed learning about research data
- UWA library workshops: Research impact and research profiles, research metrics

Research conduct and compliance

- GRS Seminar: Research conduct
- UWA Animal ethics welfare and science (PAWES) course
- UWA Safety courses: lab, laser & radioisotope safety, diver & snorkeler assessment, 4WD training

Professional development

Careers

Innovation and enterprise

Further Information

If you have any questions about the GRS Calendar of Events please contact one of the Graduate Education Officers.

The Calendar is constantly updated as is correct as of JUL 2017.
We've created a range of short videos based on our workshops and study tips. Check them out on the UWA Students YouTube channel.

You might have noticed our brightly coloured Survival Guides in the libraries, but did you know the entire collection is also available online?

We have a wide range of useful materials and services at www.studysmarter.uwa.edu.au

Check out GETSmart Study Skills online for everything you need to know about assignments, exams, time management, essays, maths and more. Just click on the link on the STUDYSmarter website.

Become a GETSmart member and receive our weekly e-newsletter with study tips from students and staff, details of our new workshops, featured YouTube videos and more. Sign up via the STUDYSmarter website.

Most of our workshops are held on the first or second floors of Student Central (the building directly across from the Co-op Bookshop).

Selected workshops will be held in the Sanders Building, on Myers St.
### Undergrad Workshops

**Week 1**  
Study smarter, not harder  
Mon, 31 July, 12-1pm, Room 2202  
Wed, 2 Aug, 10-11am, Room 2202 (rpt)

**Managing your study time**  
Mon, 31 July, 1-2pm, Room 2202  
Wed, 1 Aug, 2-3pm, Room 1237 (rpt)

**Week 2**  
Thinking at university level  
Mon, 7 Aug, 12-1pm, Room 2202  
Wed, 9 Aug, 10-11am, Room 2202 (rpt)

**Reading and notetaking**  
Mon, 7 Aug, 1-2pm, Room 2202  
Wed, 9 Aug, 11-12am, Room 2202 (rpt)

**Introduction to academic culture**  
Thurs, 10 Aug, 12-1pm, Room 2204

**Week 3**  
Writing essays: Get started  
Mon, 14 Aug, 12-1pm, Room 2202  
Wed, 16 Aug, 11-12pm, Room 2202 (rpt)

**Referencing and using sources**  
Mon, 14 Aug, 1-2pm, Room 2202  
Wed, 16 Aug, 11-12pm, Room 2202 (rpt)

**Study & Wellbeing: Enhance your learning**  
Thurs, 17 Aug, 1-2pm, Room 1237

**Week 4**  
Managing your research  
Mon, 21 Aug, 11-12am, Room 2202  
Wed, 23 Aug, 11-12pm, Room 2202 (rpt)

**Presenting like a pro**  
Mon, 21 Aug, 12-1pm, Room 2202  
Wed, 23 Aug, 11-12am, Room 2202 (rpt)

**Week 5**  
Write your thesis or dissertation  
Mon, 28 Aug, 11-12am, Room 2202  
Wed, 30 Aug, 11-12pm, Room 2202 (rpt)

**Understand statistics for research**  
Mon, 4 Sept, 11-12am, Room 2202  
Wed, 6 Sept, 11-12pm, Room 2202 (rpt)

**Week 6**  
Present your research  
Mon, 11 Sept, 11-12am, Room 2202  
Wed, 12 Sept, 1-2pm, Room 2204 (rpt)

**Writing with impact: Tips & techniques**  
Wed, 30 Aug, 10-11am, Room 2202 (rpt)

**Week 7**  
Cohesive writing: Structuring paragraphs  
Fri, 3 Sept, 1-2pm, Room 2202  
Mon, 6 Sept, 11-12am, Room 2202 (rpt)

**Academic Writing in English**

These workshops will help you to understand academic writing conventions, and develop the skills you need to produce clear, accurate and cohesive written texts in English.

**Week 2**  
Academic style: Writing in a formal way  
Fri, 11 Aug, 12-1pm, Room 2202

**Week 3**  
Academic style: Writing objectively  
Fri, 18 Aug, 12-1pm, Room 2202

**Week 4**  
Academic style: Writing clearly  
Fri, 25 Aug, 12-1pm, Room 2202

**Week 5**  
Cohesive writing: Structuring paragraphs  
Fri, 1 Sept, 12-1pm, Room 2202

**Week 6**  
Cohesive writing: Organising information  
Fri, 8 Sept, 12-1pm, Room 2202

**Week 7**  
Cohesive writing: Linking ideas  
Fri, 15 Sept, 12-1pm, Room 2202

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### Postgrad Workshops

**Honours & Masters (Research)**

Our Research Series is designed for Honours and Masters students who are writing a thesis or dissertation, and includes tips on how to plan, write, and present your research. Check out our website for other useful postgrad resources.

**Week 2**  
Manage your research  
Mon, 7 Aug, 11-12am, Room 2202  
Tues, 8 Aug, 1-2pm, Room 2204 (rpt)

**Reading and notetaking**  
Mon, 14 Aug, 11-12am, Room 2202  
Tues, 15 Aug, 1-2pm, Room 2204 (rpt)

**Week 3**  
Write your literature review  
Mon, 21 Aug, 11-12am, Room 2202  
Tues, 22 Aug, 1-2pm, Room 2204 (rpt)

**Week 4**  
Write your thesis or dissertation  
Mon, 28 Aug, 11-12am, Room 2202  
Tues, 29 Aug, 1-2pm, Room 2204 (rpt)

**Understand statistics for research**  
Mon, 4 Sept, 11-12am, Room 2202  
Tues, 5 Sept, 1-2pm, Room 2204 (rpt)

**Week 5**  
Present your research  
Mon, 11 Sept, 11-12am, Room 2202  
Tues, 12 Sept, 1-2pm, Room 2204 (rpt)

**Academic Writing in English**

These workshops will help you to understand academic writing conventions, and develop the skills you need to produce clear, accurate and cohesive written texts in English.

**Week 2**  
Academic style: Writing in a formal way  
Fri, 11 Aug, 12-1pm, Room 2202

**Week 3**  
Academic style: Writing objectively  
Fri, 18 Aug, 12-1pm, Room 2202

**Week 4**  
Academic style: Writing clearly  
Fri, 25 Aug, 12-1pm, Room 2202

**Week 5**  
Cohesive writing: Structuring paragraphs  
Fri, 1 Sept, 12-1pm, Room 2202

**Week 6**  
Cohesive writing: Organising information  
Fri, 8 Sept, 12-1pm, Room 2202

**Week 7**  
Cohesive writing: Linking ideas  
Fri, 15 Sept, 12-1pm, Room 2202

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**Masters by Coursework**

Our Masters by Coursework workshops will give you general tips and strategies for managing your Masters degree and getting the most from your units.

**Week 2**  
Mastering your Masters: Frameworks for success  
Tues, 8 Aug, 1-2pm, Room 2202  
Thur, 10 Aug, 1-2pm, Room 2204 (rpt)

**Week 3**  
Essential study skills for Masters students  
Tues, 15 Aug, 1-2pm, Room 2202  
Thur, 17 Aug, 1-2pm, Room 2204 (rpt)

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### (ma+hs) Smart Workshops

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<th>Week</th>
<th>Topics</th>
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<td>Tips for studying maths/stats at uni</td>
<td>Thurs, 3 Aug, 12-1pm, Room 2204</td>
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<tr>
<td>2</td>
<td>Algebra revision</td>
<td>Tues, 8 Aug, 1-2pm, G.06 Sanders Building*</td>
</tr>
<tr>
<td>3</td>
<td>How to avoid common maths mistakes</td>
<td>Tues, 15 Aug, 1-2pm, G.06 Sanders Building*</td>
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<td></td>
<td>Descriptive statistics</td>
<td>Thurs, 17 Aug, 12-1pm, Room 2204</td>
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<tr>
<td>4</td>
<td>Descriptive statistics (rpt)</td>
<td>Wed, 16 Aug, 11-12pm, Room 2202 (rpt)</td>
</tr>
<tr>
<td>5</td>
<td>Maths for Science students</td>
<td>Tues, 31 Aug, 1-2pm, G.06 Sanders Building*</td>
</tr>
<tr>
<td>6</td>
<td>Multivariable calculus</td>
<td>Thurs, 7 Sept, 12-1pm, Room 2204</td>
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<td>7</td>
<td>Subspaces</td>
<td>Tues, 1 Sept, 1-2pm, G.06 Sanders Building*</td>
</tr>
<tr>
<td>8</td>
<td>Fundamentals of inferential statistics</td>
<td>Tues, 19 Sept, 1-2pm, G.06 Sanders building*</td>
</tr>
<tr>
<td>9</td>
<td>Study Break</td>
<td>Thurs, 17 Sept, 12-1pm, Room 2204</td>
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<tr>
<td>10</td>
<td>Introduction to logarithms</td>
<td>Tues, 3 Oct, 1-2pm, G.06 Sanders Building*</td>
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<tr>
<td>11</td>
<td>Fundamentalsof confidence intervals</td>
<td>Tues, 10 Oct, 1-2pm, G.06 Sanders Building*</td>
</tr>
<tr>
<td>12</td>
<td>No workshops</td>
<td>Tues, 10 Oct, 1-2pm, G.06 Sanders Building*</td>
</tr>
<tr>
<td>13</td>
<td>Prepare for your maths/stats exam</td>
<td>Thurs, 3 Nov, 12-1pm, Room 2204 (rpt)</td>
</tr>
</tbody>
</table>

*The Sanders Building is on Myers St, see over for a map*
IMPROVING ENGLISH

Better English now
Improve your English language skills at UWA through:

1 WRITESmart on campus
2 GETSmart online
3 More services from STUDYSmarter

Access these from our STUDYSmarter website at www.studysmarter.uwa.edu.au

1 WRITESmart on campus

English Language Bootcamp
Boost your English in Better English now! and Communicate with confidence sessions, Mondays, Room 2202, Student Central, 12pm-2pm.

English Language Units
Gain credits for English language study in HUMA1901 and HUMA1902 units.

Honours and Masters Series
Learn to write a better Honours or Masters by coursework thesis or dissertation.

Language and Cultural Exchange
LACE
Make a friend, make a difference. Join free social events for postgrads and staff.

WRITESmart Drop-in
Get expert advice on your writing, weekdays, ground floor of the Reid Library, 10am-12pm.

WRITESmart Workshops
Participate in interactive workshops on everything from essay writing to presenting in tutorials.

2 GETSmart online

Assignment Date Calculator
Enter assignment due dates and get instant timelines for completing your work.

Coursework Research Forum
Help yourself to our resources for Coursework Masters and Honours students.

English Language Corner
Check out programs, resources and tips to improve your English fast.

English Language Survival Guides
Download these one-page guides from our website or pick them up from the Reid and Science libraries.

GETSmart News
Sign up on our website and keep up-to-date with our new workshops, screencasts and study tips.

Plagiarism Portal
Find out how to avoid plagiarism.

QUICKSmart Answers
Ask quick questions, get speedy answers and check out our responses to common study questions.

STUDYSmarter on YouTube
Check out our screencasts on writing, grammar and English language skills.
3 More services from STUDYSmarter—find these on our website

STUDYSmarter has helped to develop these other services and programs you can use to improve your English language skills. Check out the STUDYSmarter website for details.

Academic Conduct Essentials—ACE
Learn what UWA expects in terms of academic conduct and ethical scholarship.

Communication and Research Skills—CARS
Discover how to locate the best evidence and use it in your writing.

(ma+hs)Smart
Improve your maths and stats with guided self-study drop-ins and interactive workshops—all taught in English! Get great resources on our STUDYSmarter website.

UWA Students on Facebook
Chat with other students and staff and keep up-to-date with what’s happening at UWA.

UWA Toastmasters Club
Increase your public speaking skills through weekly practice sessions. Visitors are always welcome; members pay biannual fees.

Like this Survival Guide? Why not check out...
Survival Guides: English Vocabulary, Speaking in English, Listening in English, Reading in English, Writing in English

Want to know more about STUDYSmarter?
Find out about all our services and resources at: www.studysmarter.uwa.edu.au

Any suggestions?
We’d love to hear from you. Email us at study.smarter@uwa.edu.au

This resource was developed by the STUDYSmarter team for UWA students. When using our resources, please retain them in their original form with both the STUDYSmarter heading and the UWA logo.
Further information

Contact

- study.smarter@uwa.edu.au

Get expert advice and feedback on assignments, study, research and referencing. No need to book - just drop by!

10am-12pm weekdays during Semester 1 & 2 at the Reid Library

Bring your study questions any time between 10am-12pm weekdays to the Reid Library, ground floor. Open in Semester 1 & 2 Teaching Weeks, mid-semester study break and pre-exam study break.

Get study help when you need it at WRITESmart Drop-in

- **Learn how to edit and proofread** - we won't fix your work for you; we will show you how to revise it yourself.
- **Ask your study questions** - get great study tips. Our advice is based on proven strategies for study success.
- **Improve your language skills** - whether English is your first, second or third language, we're here for you.
- **Get help with research and referencing** - develop great search techniques and learn to cite right.

Who you can see at WRITESmart Drop-in

- **STUDYSmarter team members** can help you with writing, study and English language advice.
- **WRITESmart student leaders** can help you sign into the service and access STUDY Smarter resources and tips.
- **UWA Librarians** can help with any research and referencing queries.
Writing in the Sciences

ENROLL IN SCIWRITE-SP

Overview

About This Course
Welcome to the self-paced version of Writing in the Sciences! The course is organized into 8 learning units. We anticipate that each unit will take about 2 to 6 hours to complete. After completing all 8 units, you will take a multiple-choice final exam. For those trying to earn a Statement of Accomplishment, your final grade will be based on: quizzes (20%), Unit 1-3 homework assignments (40%), and a multiple-choice final exam (40%). You will have two attempts at each quiz, but just one attempt on homework and exam questions. To earn a Statement of Accomplishment, you must score at least 60% in the course. To earn a Statement with distinction, you must score 90% or better. You can monitor your cumulative grade in the course by clicking on the Progress menu.

Course enrollment and the materials and assignments will be open until at least June, 2018. If access to the course materials will be turned off at any point, notification will go out to all course participants.

This course teaches scientists to become more effective writers, using practical examples and exercises. Topics include principles of good writing, tricks for writing faster and with less anxiety, the format of a scientific manuscript, and issues in publication and peer review. Participants from non-science disciplines can benefit from the training provided in the first four units (on general principles of effective writing).

Course Format
In the first four units, we will review principles of effective writing, examples of good and bad writing, and tips for making the writing process easier. In the last four units, we will examine issues specific to scientific writing, including authorship, peer review, the format of an original manuscript, and communicating science for lay audiences.

Throughout the course, participants will watch video lectures and complete quizzes, editing exercises, and a final exam. There are also 2 optional writing exercises. Participants who opt to do those assignments will have a chance to submit two short papers, edit and provide feedback to other participants who have submitted the papers, and receive feedback on their submissions.

Course Syllabus
Unit 1: Introduction; principles of effective writing (cutting unnecessary clutter)
Unit 2: Principles of effective writing (words)
Unit 3: Crafting better sentences and paragraphs
Unit 4: Organization; streamlining the writing process
Unit 5: The format of an original manuscript
Unit 6: Reviews, commentary, and opinion pieces; and the publication process
Unit 7: Issues in scientific writing (plagiarism, authorship, ghostwriting, reproducible research)
Unit 8: How to do a peer review; and how to communicate with the lay public.

Prerequisites

Course Number: ScIWrite-SP
Classes Start: Feb 28, 2016
Estimated Effort: Self Paced
Price: Free

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How much of a time commitment will this course be?
The course consists of 8 units and each unit will take approximately 4-8 hours to complete, but you can work through all of the material at your own pace and on your own schedule. There are no due dates for any of the assignments.

Any additional textbooks/software required?
There is no textbook for this course. Participants who would like additional reading may enjoy:
- On Writing Well, William Zinsser
- The Elements of Style, Strunk and White
- Style and Syntax, Constance Hale
- Essentials of Writing Biomedical Research Papers, Mona Zinger
- We recommend taking this course on a standard computer using Google Chrome as the internet browser. We are not yet optimized for mobile devices.

Can I get CME credit for this course?
This free version of the course does not offer CME credits, but there is a fee-based CME version available as well. Go to the Stanford online CME course page for more information. You are welcome to take this free version of the course before the CME course, but note that you will still need to create an account on the CME site, pay the registration fee, and complete the CME Pre-test, Post-test, Evaluation Survey, and Activity Completion. Attestation statements in order to receive your credits.

Course image adapted from one of Nic Mclnon's photos on flickr. Used under a Creative Commons licence.
About this course: Welcome to the capstone project for the Academic English: Writing Specialization! This project lets you apply everything you've learned and gives you the practice you need for college classes by having you write a research paper. You'll have several due dates throughout the capstone to help you stay on schedule. In this capstone project, you will: - conduct research on an academic topic of your choice - create an outline to plan out your essay - write a short annotated bibliography to help you evaluate your sources - write a 7-8 page research paper - use source material correctly with MLA format

Created by: University of California, Irvine

Basic Info
Course 5 of 5 in the Academic English: Writing Specialization

Commitment 6 weeks of study, 1-3 hours/week

Language English

How To Pass Pass all graded assignments to complete the course.

User Ratings Average User Rating 4.8 See what learners said

Syllabus

WEEK 1

Getting Started

In this Capstone project, you will combine all of the skills you've learned in the 4 courses of the Academic English: Writing specialization. This week, you will choose an academic topic to research and formulate an effective research question. By the end of this week, you should know your topic and have a rough outline of your research paper.

5 videos, 6 readings

1. Video: Capstone Introduction Video
2. Reading: Capstone Overview
3. Reading: Reminder about Plagiarism
4. Video: Plagiarism Resource video 1
5. Video: Plagiarism Resource video 2
6. Reading: Message about Peer Reviews
7. Reading: The Assignment
8. Reading: Rubric
9. Reading: Resources for Review
10. Video: Choosing a Topic and Research Question video
11. Video: Making an Outline video
12. Peer Review: Submit Your Topic and Research Questions
13. Peer Review: Submit Your Outline
WEEK 2

Research and Annotated Bibliography

Last week, you learned about the assignment for this Capstone project, chose a topic, and created an outline. This week, you need to start researching and looking for source material. You will then create an annotated bibliography to submit.

1 video, 2 readings

1. **Reading**: Resources for Review
2. **Video**: Finding Sources video
3. **Reading**: Annotated Bibliography
4. **Peer Review**: Submit Annotated Bibliography

WEEK 3

First Draft and Introduction Paragraph

This week, you should start your first draft. Try to write several paragraphs including the introduction paragraph, which you should submit for feedback.

3 videos, 1 reading

1. **Reading**: Resources for Review
2. **Video**: Introduction Paragraphs video
3. **Video**: Writing Longer Essays video
4. **Video**: Using Sources video
5. **Peer Review**: Submit Introduction Paragraph

WEEK 4

The Rough Draft

This week, you should continue working on the first draft. Try to have at least four pages written when you submit the rough draft for feedback. Also, include your Works Cited page for feedback.

2 videos, 1 reading

1. **Reading**: Resources for Review
2. **Video**: Works Cited video
3. **Video**: MLA Formatting video
4. **Peer Review**: Submit Research Paper Rough Draft

WEEK 5

Revise and Rewrite

You’re getting near the end. Keep up the good work! This week, you don’t have anything to submit. Just keep revising and get that next draft to at least 7 pages. Then revise and revise again.

1 video, 1 reading

1. **Reading**: Resources for Review
2. **Video:** Academic Tone and Language video

**WEEK 6**

The Final Draft

You're almost finished! In this final week, use the time to revise your research paper and edit it carefully. When you're finished, submit it for grading and review three other learners' papers. Then you'll be done!

1 video, 2 readings

1. **Reading:** Finish Writing

2. **Video:** End of Capstone Video

3. **Reading:** Learn More

**Graded:** Submit Research Paper Final Draft

**FAQs**

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**Pricing**

<table>
<thead>
<tr>
<th></th>
<th><strong>Audit</strong></th>
<th><strong>Purchase Course</strong></th>
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<tr>
<td>Access to course materials</td>
<td>Available</td>
<td>Available</td>
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</table>
Supervising writing: helping postgraduate students develop as researchers

Anne Lee⁷ and Rowena Murray⁸

¹Independent Academic Development Adviser, Guildford, UK; ²Professor of Education, University of the West of Scotland, UK

Research and enquiry skills are increasingly required of students at all levels of the higher education curriculum, and this requires a sophisticated pedagogical response. The question is: how can we integrate current knowledge about academic writing with current knowledge about supervision? This article integrates different approaches to writing with an established theory of supervision to develop a new model for supervising the writing component of the doctoral curriculum. Theory-driven and research-based, the original model integrated five different approaches, that is, functional, enculturation, critical thinking, emancipation and relationship development and offered a way forward that has been used in many supervisor development programmes. The adaptation offered here provides a new framework for supervising writing that integrates different approaches and draws on a range of literature and research. It could help supervisors to recognise, choose from and combine the approaches to supervising writing that are available.

Keywords: academic development; conceptual model; enquiry-based learning; doctoral education; supervision; writing

Introduction

There are now many studies of research supervision. Some concentrate on a sociological or situated analysis of doctoral studies (Grant, 2007; Leonard, 2001; McAlpine & Norton, 2006) and consider supervisors as practitioners in a community of practice where social norms will have a profound effect on how they work (Lave & Wenger, 1991). There is also the view of research students as agentic (Hopwood, 2010), as organisers of their own learning. Other models create binary lines between high and low task and relationship foci, to introduce a matrix comparing four different approaches to supervision (Gatfield, 2005; Murphy, Bain, & Conrad, 2007). In addition, activities such as mentoring, coaching, sponsoring, facilitating and reflective practice have also been shown to be important in supervision (Kuwahara, 2008; Pearson & Kayrooz, 2004). Similarly, there is a large body of work on academic writing, but this is only beginning to be integrated with the research supervision role (Caffarella & Barnett, 2000; Kumar & Stracke, 2007; Murray & Cunningham, 2011). The outstanding question is as follows: how can we help supervisors use a conceptual framework to support research students to develop their academic writing skills?

Whilst much of this article refers to doctoral supervision, it is also applicable to other levels of the curriculum. The creation of knowledge arises through a process...
of enquiry, and enquiry-led learning is now a recognised pedagogic process from undergraduate through to doctoral studies (Healey & Jenkins, 2009; Kahn & O’Rourke, 2004; Lee, 2012; Tosey, 2008); however, writing about their research still causes students considerable anxiety (Bitchener & Basturkmen, 2005; Cotterall, 2011; Turner, 2010).

Academics also have a variety of concerns. There is evidence that, whilst supervisors claim that they are not ‘proof readers’, they spend a considerable amount of time doing just that. Exactly what constitutes ‘proof reading’ is also problematic: it can range from checking spelling and grammar to helping students to formulate ideas, and this latter aspect moves us into questions about ‘who’s work is it?’ (Turner, 2010, p. 433). The most common request from some social science early career researchers (who kept weekly logs on their progress) was for help with writing at every stage in their work: in the early stages of the PhD, they requested help with grant applications and upgrade papers, and in the middle stages, they requested help with writing papers, and in the final stages, they requested feedback on their thesis writing (McAlpine & McKinnon, 2013).

In our workshops, many supervisors report problems with students being unable to synthesise and think conceptually, structure their writing or write at an appropriate level. Supervisors are concerned when students keep coming back to them apparently having learned nothing from a previous set of corrections. Supervisors also worry when students repeatedly fail to submit written work, and there is evidence that students who delay or fail, do so because of concerns about writing up (Bitchener & Basturkmen, 2005; Torrance, Thomas, & Robinson, 1994) ‘making an early start on writing’ is a factor in successful PhD completions (Kiley, 2011, p. 589).

A recent study looked at supervisors’ learning during the supervision process– learning about the field, learning about strategies, about the ‘rules of the game’ and about themselves and others – and found that when it came to writing, supervisors felt they had to learn ‘basic knowledge and skills that they had bypassed during their own training’ (Halse, 2011, p. 567).

This article draws on an established holistic framework for analysing doctoral supervision and adapts it to focus on the supervision of doctoral writing (Lee, 2012). The framework can help supervisors, and academic developers manage the repertoire of supervisory approaches that are available and may be required – by institutions, professional bodies, commercial sponsors and students.

The rest of this article is structured into four sections. Firstly, we introduce the supervision framework as it has been applied to conceptualising the approaches that academics have when supervising students doing research; secondly, this framework is explored in more detail as it applies to approaches to teaching academic writing; thirdly, we provide a framework for supervising writing; and finally, we explore some of the theoretical assumptions underpinning the framework.

**Introducing the supervision framework for analysing research supervision**

Supervisors from a range of different disciplines in the UK and USA (where they are called ‘advisors’) were interviewed for the original work, and a variety of methods have been and are still being employed to test the generalisability of the framework. To start with academic colleagues, research students were invited to identify supervisors that they thought were particularly effective in one UK-based university. There was an interesting agreement amongst these parties about who should be approached...
to be interviewed. The original framework emerged after a literature search and semi-structured interviews with 12 supervisors in this one university. The interviews lasted between 1 and 2 hours each, they were recorded, transcribed and coded looking for themes and underlying concepts. Subsequent interviews were carried out with supervisors at other universities. Those interviews differed from the original 12 only in that at the end of the interview, and the emerging framework was produced and introduced as a tool for further discussion. The sample of interviewees was consciously broadened to ensure a better mix of disciplines and gender (originally, there were eight males and four females, and there was a bias towards science and business studies supervisors). Questionnaires, surveys and workshops have subsequently been carried out internationally, to test and deepen our understanding of the framework. Work previously published on this framework (Lee, 2008, 2012) did not include an examination of the issues arising when supervising research students doing academic writing, and this article fills that void.

The supervision framework enabled an examination of different actions when supervising students doing research. Its underlying premise was that an experienced supervisor will be able to move through and to any area as it becomes appropriate. As the research student gains competence from each perspective, they will move through understanding the epistemology of their discipline to embodying an ontological perspective.

The framework integrates five main approaches to supervision. They intertwine in a complex manner, and although they are disentangled here to aid clarity, it is not maintained that they are independent of each other.

- functional: where students’ projects are managed;
- enculturation: where students are encouraged to become members of the disciplinary community;
- critical thinking: where students are encouraged to question and analyse their work;
- emancipation: where students are encouraged to question and develop themselves;
- developing a quality relationship: where students are enthused, inspired and cared for.

Table 1 shows the generic application of this framework to supervising students doing research.

Applying this framework to supervising writing

The need for supervisors to attend to offering writing advice has been widely discussed (Aitchison & Pare, 2012; Delamont & Atkinson, 2004; Kiley, 2011; Taylor & Beasley, 2005; Trafford & Leshman, 2008; Wisker, 2012), and in the original interviews, supervisors described the process of supervising students’ writing as sometimes ‘painful’, ‘tedious’, ‘frustrating’ and ‘time-consuming’. Many universities have recognised the need for additional help and established learning support units where generic support to develop study skills is given – and many of these units offer one-to-one sessions for doctoral students on academic writing (Samuels, Dean, & Griffin, 2012). In workshops for supervisors run by the authors of this article, a frequent question is ‘how do I help my students to write at the right level?’
So, we re-analysed the original interview transcripts to see whether supervising writing emerged as an issue and whether there were particular approaches to supervising writing that were successful. The interviews were thematically coded looking for all explicit and implicit references to supervising writing. Those references were then coded again to look for examples of approaches or tasks and positive and negative references. In the original interviews, questions were not specifically asked about supervising writing, so we took as significant the fact nonetheless that it emerged as important. In reviewing the interview transcripts, writing emerged as a key element of supervisory practice, new examples have been identified that illustrate how the supervision framework could be applied in this new context. One supervisor highlighted the need to give attention to how they teach through writing:

... then we have the painful process of going through drafts without actually rewriting them for them. I use track changes. I don’t correct English. (I do point out where there are dreadful errors). I ask, ‘Is this consistent with this?’ and leave it as a question for the student to resolve. I will point out internal inconsistency. (Supervisor: Psychology)

The literature on research supervision was reviewed to see whether writing was a significant issue and what approaches existing academics were recommending, and then, the literature on academic writing was reviewed again to identify approaches that could be appropriate at this level. Finally, the approaches (including explicit or implicit theories that these approaches included), and sample tasks were gathered together, and the authors tested each of these against the five approaches of the supervision framework, to see whether this helped to conceptualise how academics might help their students’ writing.

All the authors we reviewed encouraged combining many approaches to supervising writing, and this article conceptualises these different approaches. The
strategies and approaches that emerged from the literature included: pointing
students to the intensely practical, for example, seeing writing as a problem solving
procedure to be undertaken in stages, introducing the on-line academic phrasebook
created at Manchester University (http://www.phrasebank.manchester.ac.uk/?CMP=),
or recommending courses run by student support units often based on the grammatic-
ical and structural advice offered in Swales and Feak (2004) and the examination of
rhetorical strategies in the approach known as ‘writing as craft’ (Aitchison & Pare,
2012).

Examples of the enculturation approach included arranging writing buddies or
mentors, analysing journal abstracts or the work of recommended authors in the
discipline (Murray, 2011). Cotterall writes about the communities of practice
perspective and ‘suggests that newcomers’ writing expertise will develop as they
observe experts writing and produce their own texts, supported by advice and
feedback’ (2011, p. 414) but highlights the importance, therefore, of students
actually having access to academics engaging in these activities. Kamler and
Thomson (2006) talk about learning to use the academically acceptable ‘grammar of
authority’.

The more conceptual approaches included using feedback or devising exercises
to develop criticality. There are several examples of this: theme analysis (Kamler &
Thomson, 2006, p. 115); conceptual mapping (Kamler & Thomson, 2006, p. 48)
and closer examination of ‘errors of reasoning’ which could include: errors of
definition, form, relevance, truth, sufficiency, assumption, causality and response
(Title, 2011, pp. 428–432).

Cotterall (2011) and Hirvela and Yi (2008) observe how a student’s identity
changes when they learn to write at this level and recognising this often an impor-
tant element of the emancipatory approach, as is exploring the student’s motivation
to write (Murray, 2011).

There are other recommendations for co-authorship and joint-texting that could
be examples of the importance of building a good relationship. Cotterall (2011) also
points out that given the power dynamic between student and supervisor the student
may be unwilling to request more help from their supervisor and thus might resort
to just implementing the supervisor’s corrections, or be unable even to name and
describe the difficulties they may be encountering. The student’s reaction to feed-
back that has been painstakingly crafted by the supervisor needs to be anticipated
and explored within the enculturation, emancipation and relationship development
perspectives and deserves further research.

Table 1 shows the supervision framework; Table 2 shows the writing framework
to demonstrate how the five approaches might be used to extend the supervisor’s
range of ways of developing their research student as an academic writer. These
approaches to supervising academic writing are drawn both from our own research,
experiences in working with supervisors and researchers, and from some of the liter-
ature that theorises academic writing. In addition to the authors mentioned immedi-
ately above, we have included strategies inspired by Boice (1990), Casanave and Li
(2008), Crème and Lea (1997), Farnsworth (2011), Kamler (2008), Lea and Street

As in Lee’s original supervision framework (2008, 2012), the vertical columns
of Table 2 shows five approaches to supervision, and the horizontal rows contain
three ways of identifying these approaches in practice.
Table 2. The writing framework: approaches to supervising writing.

<table>
<thead>
<tr>
<th>Supervisor’s activity</th>
<th>Functional</th>
<th>Enculturation</th>
<th>Critical thinking</th>
<th>Emancipation</th>
<th>Relationship development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor’s knowledge &amp; skills</td>
<td>Theory and practice of academic writing</td>
<td>Diagnosing strengths and weaknesses in writing</td>
<td>Constructing and deconstructing arguments, identifying gaps and weaknesses in logic</td>
<td>Approaches to motivation</td>
<td>Simultaneous writing</td>
</tr>
<tr>
<td></td>
<td>Range of skills and strategies</td>
<td>Deciding which scholars and debates to highlight</td>
<td></td>
<td></td>
<td>Rhetorical intelligence</td>
</tr>
<tr>
<td></td>
<td>Understanding stages in academic writing</td>
<td></td>
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</tr>
<tr>
<td>Possible student reaction in writing</td>
<td>Complies</td>
<td>Revises</td>
<td>Analyses</td>
<td>Develops ideas through writing</td>
<td>Manages incremental writing</td>
</tr>
<tr>
<td></td>
<td>Completes tasks and/or resets goals</td>
<td>Learns about academic writing</td>
<td>Chooses rhetorical moves</td>
<td>Debates approaches and content</td>
<td>Involves audience in construction of writing</td>
</tr>
<tr>
<td></td>
<td>Uses plan</td>
<td></td>
<td>Responds to critique</td>
<td>Embraces criticism</td>
<td></td>
</tr>
</tbody>
</table>
Practical examples of writing tasks allocated to different supervisory approaches

At a practical level, supervisors can analyse the types of writing tasks that they set their students, and Table 3 demonstrates the use of the framework for this purpose. Fernsten and Reda (2011) list 35 questions that can prompt students to be reflexive about themselves as writers and help to analyse the causes of problems with writing. They also propose a list of topics for discussion. Table 3 lists a variety of writing tasks and activities that can be used to support academic writing and allocates them to different parts of the framework. These activities are also drawn from our own experience in supervision, in running workshops for supervisors and researchers, and the literature on academic writing (e.g. Elbow, 1973; Lillis, 2001; Murray, 2012; Swales & Feak, 2004).

Each of these tasks could be further defined, varied, combined and extended. All of these examples can contribute to the production of a thesis and enable student learning through writing. This array of tasks shows the range of writing activities that is possible and, implicitly, explains the many different purposes of ‘writing’ during the doctorate: writing to develop ideas, writing to find focus, writing to explain focus, writing to explain the research, writing to make the case for the research, writing to document ideas and writing (that is much-revised) ready to submit for assessment or peer review. These different purposes call for different writing activities. Writing retreats (a period of dedicated time when writers work in the same place, separate from other research tasks) are considered as a separate part of the table because the fact that aspects of such retreats can be allocated to each approach explains why they can create such a powerful experience (Murray & Cunningham, 2011). Whilst all of the activities included in Table 3 are well established in the field of academic writing, they are likely to be less familiar amongst supervisors generally. This new use of the framework demonstrates how these strategies may be deployed during the doctorate.

A conceptual approach to this issue allows supervisors to explore different understandings of research supervision at a theoretical level and achieves several objectives: firstly, it can create boundaries (albeit permeable ones) around different approaches that enable us to collect together different tasks. This makes it easier for supervisors and academic developers to identify core beliefs that can be wittingly or unwittingly driving behaviour. Secondly, it can expose the limitations of focussing on any one approach at the expense of others. Thirdly, it can enable supervisors to identify student researchers’ learning needs in new ways. Table 4 summarises these points and integrates the theories behind the supervision framework with those behind the writing framework.

Implications

We recognise that there is a linear way of supervising the stages of writing (brainstorming, drafting, redrafting, editing, release, etc.) but argue that alongside this linear approach it is necessary to have a conceptual understanding of how each stage can be approached. The increasingly diverse and inherently complex nature of the research supervisors’ role creates a need for the kind of conceptually sound theory-driven and research-based model such as the framework presented in this article.
Table 3. The writing framework: exemplar writing tasks.

<table>
<thead>
<tr>
<th>Exemplar writing tasks</th>
<th>Functional</th>
<th>Enculturation</th>
<th>Critical thinking</th>
<th>Emancipation</th>
<th>Relationship development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create writing plan</td>
<td>Revisions</td>
<td>Define needs of academic audiences</td>
<td>Do freewriting on research aims, methods, contribution</td>
<td>Discuss writing process with other researchers</td>
<td></td>
</tr>
<tr>
<td>Define long, medium and short term writing goals e.g. writing for publication</td>
<td>Ask for a written report on how your previous feedback was acted on</td>
<td>Highlight rhetorical moves in own writing</td>
<td>Do generative writing</td>
<td>Evaluate others’ research</td>
<td></td>
</tr>
<tr>
<td>Give a written report on progress at defined milestones</td>
<td>Structured discussion of writing-in-progress with other researchers</td>
<td>Use range of writing strategies e.g. encourage student to draw concept maps</td>
<td>Create and use own prompts</td>
<td>Autobiographical writing</td>
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<tr>
<td></td>
<td>Get students to write book reviews, blogs or conference abstracts</td>
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<td></td>
<td>Get student to read their work (maybe out loud) as if they were the audience.</td>
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<td></td>
<td>Encourage teams to co-author papers</td>
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<td>Outline generic thesis structure (headings &amp; subheadings)</td>
<td>Make explicit the framework you will use for giving feedback</td>
<td>Analyse and discuss published articles &amp; completed theses</td>
<td>Choose metaphor to describe next writing task (e.g. ‘literature review’) and compare metaphors with others</td>
<td>Discuss writing goals and achievements, give feedback in person as well as in writing</td>
<td></td>
</tr>
<tr>
<td>Outline the usual stages in research and thesis writing</td>
<td>Give and receive feedback on the achievement of writing goals in groups</td>
<td>Ask the student to write a report on features of journal articles</td>
<td>Define purpose of writing tasks</td>
<td>Joint-text writing at the computer</td>
<td></td>
</tr>
<tr>
<td>Set writing goals and agree a timetable for submitting outlines, first drafts and revisions</td>
<td>Encourage peer feedback sessions</td>
<td>Define the different rhetorical moves that need to be used</td>
<td>Discuss writing in the first or third person</td>
<td>Compare own critiques of research with others’</td>
<td></td>
</tr>
<tr>
<td>Functional Enculturation</td>
<td>Critical thinking</td>
<td>Emancipation</td>
<td>Relationship development</td>
<td></td>
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</tr>
<tr>
<td>Get the student to attend an academic writing course</td>
<td>Get students to write to your ‘prompts’</td>
<td>Get the student to summarise the thesis argument (at different stages in research)</td>
<td>Decide length, scope and scale of writing tasks</td>
<td></td>
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</tr>
<tr>
<td>Share and compare writing practices</td>
<td>Use this framework to assess progress and define development needs</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Typical feedback could be</th>
<th>By when do you think you can achieve this?</th>
<th>How you compare your work to XX’s?</th>
<th>What framework are you using to develop your argument here?</th>
<th>Tell me what you think of what you have achieved so far?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where will this fit into your overall structure?</td>
<td>What do you think our colleagues would say about this?</td>
<td>How could we critique this?</td>
<td>Where do you think this is leading?</td>
<td></td>
</tr>
<tr>
<td>I think peer reviewers would say…</td>
<td>I find this methodologically confusing, could you do it this way…?</td>
<td>Write to me about what you have learned most about in this session.</td>
<td>Whose work do you most admire?</td>
<td></td>
</tr>
<tr>
<td>I can see you have put a lot of work into creating this…</td>
<td>Shall we try writing alternate sections?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Writing retreats</th>
<th>Offering a structured day with timed spaces for concentration on writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overt statement is that a writing retreat formalises and gives authority to the fact that ‘writing is what academics do’</td>
<td>Writing with others to exchange critical expertise</td>
</tr>
<tr>
<td>Time away from the office and other demands gives the freedom to think</td>
<td>Encouragement can be fostered through discussions outside the silent ‘writing periods’. There is opportunity for nurturing periods e.g. through eating together or neck massages</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A. Lee and R. Murray</th>
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</table>
Table 4. Theoretical understanding of the supervisory role and its limitations as applied to supervising writing.

<table>
<thead>
<tr>
<th>Functional Understanding</th>
<th>Enculturation</th>
<th>Critical thinking</th>
<th>Emancipation</th>
<th>Relationship development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor’s underlying understanding of their role in supporting writing</td>
<td>Technical virtuosity</td>
<td>Discipline-based research sensibility</td>
<td>Aesthetic and critical judgements</td>
<td>Epistemological and ontological development</td>
</tr>
<tr>
<td>Limitations to this approach</td>
<td>Can be rigid and inflexible</td>
<td>Can limit new thinking that challenges assumptions made by the discipline</td>
<td>Can be negative and depersonalising</td>
<td>Can encourage a lack of focus</td>
</tr>
<tr>
<td>Beliefs about how people learn</td>
<td>Absorbing Regurgitating</td>
<td>Emulating Replicating</td>
<td>Theorising Analysing</td>
<td>Discovery Constructivism</td>
</tr>
<tr>
<td>Values</td>
<td>Performativity</td>
<td>Belonging</td>
<td>Rigour</td>
<td>Autonomy</td>
</tr>
<tr>
<td>Identifying what students might be seeking</td>
<td>Certainty Clear signposts Evidence of progress</td>
<td>Belonging Direction Role models Career opportunities</td>
<td>Ability to think in new ways, to analyse and recognise flaws in arguments</td>
<td>Self-awareness Autonomy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Self actualisation</td>
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</tbody>
</table>
In this complex context, academic developers can use this framework to help new supervisors clarify their intentions and experienced supervisors compare practices. Co-supervisory teams can use it to negotiate roles systematically and comprehensively. The framework could also be used in negotiations between industrial and academic co-supervisors. It can enable supervisors to take stock of, define and interrogate their habits, values and assumptions. There is also potential for the framework to be developed and extended to help students manage self-assessment.

Supervisor development has been problematic, but in the UK, the Quality Assurance Agency focuses parts of its institutional audit on this topic, and Research Councils require universities to provide development for supervisors involved in doctoral training centres. The hitherto ‘intense intimacy’ of the relationship between supervisor and student (Grant, 2007; Manathunga, 2005) has been challenged and the introduction of research into the curriculum at all levels of higher education means that these writing skills need to be formed earlier and by much larger numbers of students.

Learning support groups can use the framework to clarify the different types of writing support that they can offer, so that the academic supervisor can concentrate on areas where they have the expertise.

Conclusion
In the context of increasing complexity, adopting the holistic approach described in this article could help academics, industrial supervisors, academic developers and learning support units provide effective support to students as they write about their research. Furthermore, their research is more likely to be presented in a timely and coherent manner.

This article shows that the application of the supervision framework to supervising writing offers a conceptually sound and holistic approach. There is growing evidence from our workshops that using this framework helps supervisors who have previously encountered difficulties with students’ academic writing to extend and integrate the approaches they use, and to tailor those approaches to the needs of the individual student in front of them.

Further research on the content and combinations of approaches that students and supervisors find most helpful is needed if we are to achieve the international goal of supporting those who seek to make supervision contributions to knowledge at the highest level.

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References


COACHES work with coachee’s on many aspects of the latter’s career, for example, the team, performance or effectiveness. One aspect not often specifically singled out in coaching is writing. Yet, for the vast majority of coachees (and often for the coaches) who work in professional roles, writing is a core element of their job (National Commission on Writing, 2004). If the coachee is a student, perhaps completing a research higher degree such as a PhD, or an academic, they will be unable to succeed in their jobs unless they are productive writers. Despite the importance of writing in education and careers, very little is known about the internal psychology of writing. Although there are many courses, books and so on about writing, it is generally assumed that people will somehow work out how to manage themselves to write productively and well. Most of these courses and books are about the mechanics of writing, such as how not to split one’s infinitives. In the scholarly literature, the majority of research and comment focuses on a developmental or competency approach to writing (e.g. Camp, 2012; Grigorenko et al., 2012). There is also substantial scholarly literature on improving writing skills, of which the vast majority tends to take a very behavioural- and skills-based approach, which is largely driven by the developmental literature (e.g. Kellogg, 2009; Martinez et al., 2011; Porritt et al., 2006). While these approaches have been shown to be of some use to writers, we claim that without reference to the internal psychological world or belief systems of the writer, such behavioural approaches may be less effective (cf. Boice, 1985; Wellington, 2010). As such, there has been little focus on how writers can use an understanding of themselves and their beliefs to improve their writing. A recent commentary on this topic published in the leading science journal Nature (Gardiner & Kearns, 2011) was the most-read piece in the journal during the
week the journal was released. This indicates that, despite the deficiency in academic application to the internal world of the writer, there is clearly a great deal of interest in the topic. The interest from the writers themselves stems largely from the productivity to be gained from understanding the internal processes involved in high-quality high-quantity writing. As will be demonstrated, many of the beliefs and consequent behaviours in which people engage directly affect the quality and quantity of their writing. Using evidence-based principles to change beliefs and behaviours as a way to improve performance has mostly been the domain of coaching psychology. Coaching psychology has demonstrated reliable improvements in both performance and affect (e.g. see Grant, Cavanagh et al. [2010] for a discussion on the achievements of coaching research). As such, coaching psychology is an ideal methodology to apply to writing productivity and quality, for both our own jobs and those of our coachees.

Coaching psychology and writing
There has been a significant increase in the evidence base for coaching psychology, as demonstrated by the increase in the number of publications in recent years (see Grant [2011] for an annotated bibliography that shows this increase). More than half of the scholarly publications in coaching have appeared in the last 10 years. General conclusions are now being made about some of the psychological and behavioural impacts of coaching (Grant & Cavanagh, 2011; Spence & Grant, 2011). The majority of coaching practice involves coachees in executive or business roles, and research supports the efficacy of coaching in these settings (Passmore & Fillery-Travis, 2011). These research studies have focused on performance within business or commercial environments. Stern (2004) notes that executive coaching focuses on enhancing the executive’s abilities and potential, particularly as regards leadership and organisational outcomes. However, many people work or study in highly demanding roles with limited traditional leadership or commercial responsibilities. Often, the centrepiece of such a role is writing of some description. For example, academics, PhD students and professionals who must write reports and other documents. To date, there has been little in the coaching literature to guide the coach working with such clients. Grant, Green et al. (2010) make this point in the first randomised controlled trial (RCT) examining coaching in an educational setting.

Many professional coaches and consultants now have considerable experience in conducting executive and leadership coaching engagements in commercial and organisational settings. Such experiences have much to offer the broader social enterprise, including the educational sector. We encourage executive coaches and consultants to extend their research and practice and look for new applications in such areas, and in doing so to continue to further contribute to society’s development and well-being. (p.165)

The aim of this paper is to attempt to highlight and contribute to redressing this situation.

Evidence-based coaching psychology
Despite some mixed findings, a number of quasi-experimental studies have shown a variety of positive outcomes for coaching. For example, Gyllensten and Palmer (2005) found that workplace coaching reduced some aspects of strain (anxiety and stress) in a coaching group compared with a control group. Kochanowski et al. (2010) found that the participants in a feedback and coaching group had higher levels of collaboration compared with a feedback-only control group. Evers et al. (2006) found that managers who received coaching increased their self-efficacy beliefs in relation to setting their own goals and expectations about acting in a balanced way. Similarly, Leonard-Cross (2010) found that participants who had received coaching had higher levels of self-efficacy compared with those who had not received coaching. In a within-subject single-
case study design, Libri and Kemp (2006) found that an executive was able to improve his sales performance, self-evaluation and global self-ratings of performance after participating in an executive coaching programme. Although these studies do not relate to writing per se, they demonstrate the efficacy of coaching as a change methodology.

While the quasi-experimental studies show some support for coaching psychology, RCTs provide a higher level of rigour and, therefore, allow for more robust conclusions about the efficacy of coaching. Of the 15 between-subject outcome studies that exist in the coaching literature, 11 utilised a randomised controlled design and largely support the efficacy of coaching psychology (see Grant & Cavanagh [2011] for a list these studies). For example, Taylor (1997) found that coaching was more effective than training for reducing stress in medical students preparing for exams. Miller et al. (2004) found that coaching, together with feedback, was more successful than training style interventions in improving the interviewing skills of mental-health workers. Gattellari et al. (2005) found that GPs made better clinical decisions about a screening test after they had been coached by peers, relative to a control group. Spence et al. (2008) found that coaching and mindfulness training led to better goal attainment than did health education alone. Grant (2002) found that combined cognitive and behavioural training was more effective at improving performance and mental health over a 12-month period than either cognitive or behavioural coaching alone. Green et al. (2006) found that solution-focused (as opposed to problem-focused) coaching increased goal attainment and well-being, with gains maintained at 30-week follow-up, and (Spence & Grant, 2007) found that solution-focused cognitive behavioural coaching) more effectively increased goal commitment and goal attainment than did peer coaching. More recently, in the first RCT involving executive coaching, Grant et al. (2009) found that solution-focused CBC improved goal attainment, resilience and well-being, and reduced depression and stress. Again, despite these studies having limited reference to writing specifically, they do provide a high level of support for the ability of coaching psychology to assist people to change.

In a high-school setting, a setting more similar to the non-commercial or non-leadership environment under discussion in this paper, Grant, Green et al. (2010) found that teachers who underwent cognitive behavioural solution-focused coaching had higher levels of goal attainment, workplace well-being and resilience, and lower levels of stress, when compared with the control group. Although this was the first RCT to focus on the impact of coaching on goal attainment and well-being in an education setting and outside the commercial organisational settings observed in executive-coaching studies, there was no focus on specific aspects of the non-commercial setting, such as writing.

In summary, all of the RCTs conducted to date that have utilised a goal-focused or solution-focused coaching approach support the efficacy of coaching across a wide variety of outcomes (ranging from goal attainment to well-being, mental health and hardiness) and over an extended period. It would be reasonable to conclude that these findings would extend to a job-related activity such as writing.

Although writing is not directly related to profitability or team management, writing is an integral part of many people’s jobs that could benefit from coaching. Recently, Vitae, the body responsible for the support and development of researchers and doctoral students across the UK, released the report Coaching for Research in UK Higher Education Institutions (2012). The report concluded that coaching was a promising methodology for achieving sustainable research careers. Given that one of the biggest predictors of career success for these groups is the ability to produce high-quality high-quantity writing, focusing coaching specifically on
writing, is likely to provide much benefit. Therefore, this current paper attempts to apply existing knowledge about coaching to writing. For many people, the ability to improve their writing productivity and the effectiveness of their writing could make the difference between having a successful or just okay – or even failed – career.

**Cognitive behavioural coaching**

As evidenced by the studies just reviewed, cognitive behavioural coaching (CBC) is one of the most highly utilised approaches (at least by coaching psychologists) to coaching (Grant & Cavanagh, 2011; Spence & Oades, 2011; Whybrow & Palmer, 2006). CBC is based on the most well-validated and evidence-based intervention in clinical psychology: cognitive behaviour therapy (CBT) (Hollon & Beck, 2004; NICE, 2008). Neenan (2008) (see also Neenan & Palmer [2001]) describes how CBT can be, and has been, adapted to the field of coaching. The basic underpinning of CBC is the ABCDE cognitive model, which proposes that Activating events elicit Beliefs that give rise to Consequences, such as unpleasant and unhelpful emotions and behaviours; to reduce these consequences, it is necessary to Dispute the inaccurate beliefs or thoughts, which in turn leads to an Effective new outlook (Dryden & Neenan, 2004; Neenan & Palmer, 2001). Many of the other frameworks used to guide coaching sessions, for example, PRACTICE (Palmer, 2007, 2011), can be incorporated into a cognitive behavioural framework. More sophisticated versions of the basic CBC model have been developed, such as the SPACE model, which takes a bio-psycho-social approach (Edgerton & Palmer, 2005). The basic premise of cognitive behavioural models is if you can change people’s beliefs (in this case, about writing), you will change their behaviour, which will lead to more productive attitudes and behaviours. Coaches can utilise any of these models when coaching writers. However, we argue that coaching a writer without reference to the underlying

![Figure 1: The ABCDE model of CBC as applied to writing.](image-url)
beliefs held by the writer will lead to short-term or sporadic results. Figure 1 illustrates how the foundation of all CBC models, the ABCDE model, applies to writing. The next section explains this model in detail.

**Activating event**

Clearly, the activating event for writing is writing. However, not all writing is equal. Some types of writing are more likely than other types to give rise to unhelpful beliefs and behaviours. Writing that has an evaluative component is the most likely to induce inaccurate thoughts and production-slowing behaviours. The more significant the evaluation, the bigger the unhelpful reaction. Martin et al. (2003) discuss the ways in which competitive academic environments can lead to unproductive self-protection strategies. In education settings, all writing will be evaluated, that is, ‘marked’. This is a central element of why so many students suffer from poor study behaviours, such as overcommitting (Koszegi, 2006), busyness (Silvera, 2000), perfectionism (Greenberg, 1985), procrastination (Martin et al., 2003; Onwuegbuzie, 2004; Solomon & Rothblum, 1984), disorganisation (Norem, 2001), not putting in effort (Urdan & Midgley, 2001) and choosing performance-debilitating circumstances (Sanna & Mark, 1995). The educational pathway that involves the most rigorous and highest level of evaluation is the PhD. Submission rates across Western countries sit between 50 and 60 per cent (Jaschik, 2008; Jiranek, 2010); more recently in the UK at some institutions, submission rates have been higher (Economic and Social Research Council, 2010). The attrition rates in these research higher degrees are extremely high, as are the unhelpful behaviours. A number of researchers argue that it is the unhelpful behaviours, rather than the difficulty of the task, which is responsible for these low completion rates (Kearns, Forbes et al., 2008; Kearns, Gardiner et al., 2008; Manathunga, 2005).

The traditional study environment is not the only activating event for unhelpful beliefs and behaviours in relation to writing. Many professional careers involve a significant amount of writing and significant pressure to write. Academia is one such profession. In a major study of 15 Australian universities, Gillespie et al. (2001) found that academic staff perceived a sizeable increase in job demands over the preceding five years and that, among other things, task overload was a significant contributor (see Kinman & Jones [2008] for similar findings in the UK). Winefield (2003) (see also Court & Kinman [2008]) noted that this task overload consisted of increasing pressure to lift performance in the areas of publishing and acquiring external grants. Bakker et al. (2010), who presented further analyses from the Winefield (2003) cohort, showed that ‘personality characteristics’ contributed to the pressure and lack of success experienced by some academics and they suggested there was ‘the need to tailor interventions at the individual, not just the workplace, level’ (p.633). In essence, Bakker et al. recognised that the issues did not rest entirely with the workload; the ways in which individuals responded to the pressure to write made a substantial difference. Writing when under pressure to do so and when it is important for one’s career is a significant activating event for unhelpful beliefs. Other professions also involve a high level of writing and the need to write under pressure; as such, people working in these professions are likely to suffer similar issues.

**Beliefs**

When writers are faced with a writing task that they know someone else will read and judge or when they have multiple competing demands or both, the dominant response of many writers is to not write at all, or to write very slowly. Writers have a plethora of very plausible and convincing beliefs to support this inaction. We have coached thousands of writers (individually, and in small and large groups), and the following beliefs are the most common and most strongly held beliefs that we have encountered.
I’m not ready yet
Commonly, writers will say that the reason they are not writing is they do not feel ready. They have a belief that they cannot write unless they feel ready. In fact, they tell themselves that they will lower the quality of their writing by ‘forcing’ their creative thoughts or ideas to flow. Writers often believe that if they just wait a bit longer they will feel ready.

I’ll get it all clear in my head first
Another very commonly held belief among writers is a misconception about the writing process. There is a belief that writing is a recording process; therefore, they try to get it all clear in their heads first. They believe that when it is ‘all clear’, they will start to write. Of course, it is never all clear and consequently they delay writing.

I don’t have enough time
This belief is that unless they have big blocks of time in which to write, it is a waste of time trying to write. Writers often believe that because writing is a complex and demanding task, to try to write in small blocks of time simply would not work. They, therefore, think it is better to write nothing at all. In an examination of why academic staff struggled with writing productivity, Boice and Jones (1984) found this type of belief to be a significant cause of poor writing output.

It won’t be good enough
Finally, there is the nagging belief that dogs most writers at some point in the writing process: their writing is not very good, so there is not much point in continuing. Writers often believe it would be better to wait until it felt easier or until it was clearer, because it is a waste of time writing ‘rubbish’.

Consequences
These beliefs lead to a variety of behavioural consequences among writers. Any difficult situation could lead to the type of avoidance behaviours described below; however, these are the most common consequences we have observed among writers. The consequences listed are mainly behavioural. This is because most of the discomfort associated with writing is avoided by engaging in the behaviours described below.

Don’t do anything – Procrastination
A very common behavioural consequence of the above beliefs is to do nothing or, at least, not to do anything that would constitute writing. When people procrastinate, they are postponing until later an action they know they should be taking now. Persaud (2005) estimates that up to 20 per cent of the adult population suffer from chronic procrastination. It is estimated to be even higher among student populations, who generally have an abundance of writing tasks to complete. For example, Solomon and Rothblum (1984) found that 46 per cent of undergraduates reported high levels of procrastination in relation to writing. Further, they procrastinated about the task of writing more than any other task. Coaching psychology has been found to be an effective tool in helping to reduce procrastination (Dryden & Neenan, 2004; Karas & Spada, 2009; Neenan, 2008, 2012).

Do anything else – Displacement activities
Writers may not be writing, but this does not (usually) mean they are doing nothing. Generally, they engage in a range of behaviours that keep them busy: displacement activities. Displacement activities are behaviours that displace the guilt people feel for not doing what they should be doing – in this case, writing. Common displacement activities among writers include reading, sourcing more information, data and so on, referencing, formatting, editing and even housework (Ahern & Manathunga, 2004; Boice, 1990; Wellington, 2010).

Do everything else – Overcommitting
Finally, when all else fails, writers who have unhelpful beliefs, such as ‘I’m not ready yet’ or ‘It won’t be good enough’, often become overcommitted. They volunteer to organise a conference, to help with the office move or
to re-write the curriculum. O’Donaghue and Rabin (2001) found that the more important or desirable the goal, the more likely it was that people would choose to work on other tasks. This is counter to common sense; most people would expect that when they have a choice they would choose to work on their important goals. In relation to writing, many writers become so overcommitted that it is essentially impossible for them to write.

Disputing
What is the truth about writing? Should people wait until they feel ready? Should they or try to get it all clear in their heads first, or only write when they have big blocks of time available? Perhaps as a writer yourself, you are wondering whether these beliefs are true. If you are a coach, you will certainly need to know whether they are true. As is the case with all good CBC, the answer lies in the evidence.

You have to write before you feel ready
Writers often do not feel ready to start writing, but they may never feel ready. In fact, a writer has to start writing before they feel ready. If this is not true, why is it that most writers miraculously become ready to write as soon as a deadline appears? As further evidence, a study of academics showed that those who were forced to be creative had twice as many creative ideas as those who were allowed to have them in their own time, and there was no discernible difference in quality (Boice, 1983). Table 1 provides examples of ways to dispute beliefs related to waiting until a writer feels ready.

Writing clarifies your thinking
Waiting until things are clear in one’s head is a misunderstanding about how writing works. Writing is actually creative and interactive. As people write, they begin to see the flaws and holes in their arguments that they could not see when it was in their heads. The truth is that the process of writing clarifies the writer’s thinking (Mandel, 1980; Perl, 1980). In fact, we would go even further and say that writing is a form of rigorous thinking. Table 2 provides an example of disputing these beliefs.

Small amounts of time are effective
Although writers often feel it is necessary to have big blocks of time in which to write, the research does not support this. In a landmark study by Robert Boice (1983), which was re-analysed by Krashen (2002), academics who wrote for 30 minutes a day produced more peer-reviewed publications across a year than did academics who wrote in big blocks of time. When coaching writers, it is important to address this issue; if not, it is likely to become a major block to writing (Boice, 1985, 1990, 2000). The easiest way to dispute this belief is to have writers conduct a behavioural experiment whereby they

<table>
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<tr>
<th>Thoughts</th>
<th>What’s Accurate</th>
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<tr>
<td>I can’t write if I’m not feeling creative.</td>
<td>Apparently, once I start writing that will create more ideas than if I wait for inspiration to strike.</td>
</tr>
<tr>
<td>I don’t feel in the mood for writing.</td>
<td>Sometimes you have to do things you don’t like, to get what you want. Maybe once I start, I’ll get in the mood.</td>
</tr>
<tr>
<td>I shouldn’t have to force myself.</td>
<td>That would be nice but most writers struggle at some point. There are very few lucky people where it all comes naturally.</td>
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Table 1: Disputing beliefs related to having to feel ready before writing (from Gardiner & Kearns, 2010).
agree to write for 45 minutes every morning (our replication of Boice’s research shows that 45 minutes in non-test conditions works better, but 30 minutes is still effective). If, at the end of one week of writing, the writer feels they are less productive, they are free to return to writing in big blocks of time. In 15 years of coaching writers, less than one per cent have made a conscious decision to return to writing in big blocks of time.

If it was okay before, it is likely to be okay this time

Underlying many of the beliefs is the core belief that the writing produced is not particularly good. Worse, when others see how ‘bad’ it is, the writer will be exposed as a fraud. This is commonly referred to as the imposter syndrome – the belief that you are one mistake away from being exposed as a complete and utter fraud. To create effective new beliefs and behaviours, it is important for the coach to challenge the inaccuracies in such thoughts. The most effective form of disputation for the coach to use is, along with the coachee, to look at past evidence of writing abilities. If people have written well in the past (most writers have), it is likely they will be able to write well in the future. Table 3 provides an example of disputing these beliefs.

Effective new outlook and behaviours

Once inaccurate beliefs have been disputed, it is possible for effective new beliefs and behaviours to be utilised. To effectively establish the new outlook, it is necessary for writers to start their writing and to practise it regularly. This achieves two things; first, it acts as a form of exposure and ensures that the inaccurate thoughts are fully disputed and, second, it allows writers to build a genuine sense of self-efficacy as their skills improve. Following are the new attitudes and behaviours that are most effective.

Get started

Writers usually don’t start writing because they don’t feel like it – they don’t feel motivated. Most people fundamentally misunderstand how motivation works in practice. They believe that in order to start they have to feel like doing the action in question. In essence, they believe that motivation leads to action, but this is not how motivation works. Motivation is triggered by taking action. Therefore, action leads to motivation, which, in turn, leads to more action (Kearns & Gardiner, 2011; Schwarz & Bohnet, 1996). This requires the writer to make a start before they feel like starting. In return for this small forced step, the writer soon feels motivated to continue (as demonstrated in Figure 2). The coach needs to explain to writers that despite not feeling motivated, after a small amount of action, (in our experience, approximately 10 to 15 minutes), it is likely they will begin to feel more motivated. The coach can use a behavioural experiment to demonstrate this to writers: ask them to write for 30 minutes, and if they are not motivated by the end of that time, they may stop. They then need to

<table>
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<tr>
<th>Thoughts</th>
<th>What’s Accurate</th>
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<tr>
<td>I need to get my ideas clear in my head before I can write</td>
<td>Writing things down will help me clarify my ideas.</td>
</tr>
<tr>
<td>There’s no point in starting if I don’t know what I’m going to say</td>
<td>I won’t know what I’m going to say if I don’t get started!</td>
</tr>
<tr>
<td>I just need to think it through for a bit longer</td>
<td>What if I write first and then I can think about it afterwards. At least I will have something to think about.</td>
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Table 2: Disputing beliefs related to having to ensure it is all clear in one’s head before one can write (from Gardiner & Kearns, 2010).
Table 3: Disputing beliefs related to concern over the quality of writing (from Gardiner & Kearns, 2010).

<table>
<thead>
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<th>Thoughts</th>
<th>What’s Accurate</th>
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<tr>
<td>This is not written well enough.</td>
<td>How do I know? What about previous stuff I’ve written – that was okay.</td>
</tr>
<tr>
<td>There is no argument – it’s just descriptive.</td>
<td>How do I know? Check it out. I can work on the argument once I get some feedback.</td>
</tr>
<tr>
<td>It’s got mistakes.</td>
<td>Of course. All work does. What specifically am I worried about? What can I do about it?</td>
</tr>
<tr>
<td>It’s not good enough to get published.</td>
<td>But this is still a draft.</td>
</tr>
<tr>
<td>It’s not as good as what gets published.</td>
<td>It’s not fair to compare my draft with a finished manuscript.</td>
</tr>
<tr>
<td>I’ve fooled people up until now, but this will prove how bad I am –</td>
<td>If I’m smart enough to fool them for this long, then I’m probably smart enough to be here.</td>
</tr>
<tr>
<td>never mind clever!</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2: The relationship between action and motivation (from Gardiner & Kearns, 2010).
come back to the writing the next day and write for another 30 minutes. The vast majority of writers will begin to feel more motivated by writing than they will by waiting.

Stay started
At this point, it is useful for coaches to explain to writers about the physiological properties of anxiety: if you avoid it (avoidance), it gets worse. If you stay with it (exposure), it gets better (Linnenbrink & Pintrich, 2002). Although many writers may not necessarily experience anxiety, an underlying physiological discomfort often drives writers to avoid writing. Many writers are not experiencing anxiety because they are engaging in displacement activities instead of writing. Therefore, the effective new behaviour that the coach needs to explain to the writer is ‘staying put’ for at least 45 minutes. This allows the anxiety or discomfort associated with writing to abate. We sometimes say that if writers keep writing they can even experience ‘negative anxiety’, more commonly referred to as fun!

Snack writing
For most people, their motivation to keep writing will not be sustained if the task is open-ended or too long. Given the evidence for higher productivity when people write in small blocks of time rather than large blocks of time, ‘snack writing’ is an ideal effective new behaviour. Snack writing increases both motivation and productivity (Kearns & Gardiner, 2011). The main feature of snack writing (as opposed to ‘binge writing’) is that snacks are regular. Coaching writers to write for 30 to 45 minutes every day is most likely to lead to increased productivity (Boice, 1989). This is different from the points made above about motivation and anxiety. The coach needs to share with writers the techniques for making a start (do not wait until you feel like it) and for continuing with their writing (the discomfort will go away). However, snack writing helps writers understand that it is not a waste of time to write in small blocks of time and that it is probably the most effective and productive way to write. The purpose of coaching is to help writers accept this proposition and then to coach the various pitfalls (and there will be many) that occur along the way.

Apply the 80/20 rule
Once a coach can get a writer to the desk and convince them to stay for at least 30 to 45 minutes, the 80/20 rule (or the Pareto Principle) is one of the easiest ways to increase writers’ productivity. The 80/20 rule is based on the work of the Italian economist Vilfredo Pareto who noted that 80 per cent of the wealth in Italy was owned and produced by 20 per cent of the population. The essence of the rule is that 80 per cent of output is created by 20 per cent of the input – the rest is mostly window dressing. The 80/20 rule applies to many aspects of life: 20 per cent of people take 80 per cent of doctors’ appointments, 20 per cent of students consume 80 per cent of teachers’ time and 20 per cent of academics produce 80 per cent of the published research (Ito & Brotheridge, 2007). How does this knowledge help with the coaching of writers? When some of the beliefs described above have been disputed, writers can be encouraged to write – not to perfect as they write, but simply to write. Twenty per cent of a writer’s effort will lead to 80 per cent of the finished product (particularly if the writer does not edit or read or format during the writing process). If the writer only writes, the argument and the structure will appear quickly. It will take time to edit, format, check facts, find references and so on (the remaining 80 per cent of the work); however, the most difficult work (and the most likely work to be avoided) is done.

Summary
We contend that coaching psychology, and CBC in particular, is an extremely effective methodology for assisting the many people who have to write as part of their profession or education. Although there is a growing and increasingly positive evidence base for the effectiveness of CBC, to date there has been
no study (or paper of any kind) on the application of coaching to writing. In fact, the vast majority of coaching focuses on leadership and commercial responsibilities. There is no reason to believe that the positive results demonstrated in these domains would not also apply in relation to writing. This paper is a first attempt to show how CBC might be applied to the specific task of writing. From our work with thousands of writers, we know that the application of CBC to their writing goals (and sometimes lack thereof) has fostered, and saved, many a person’s career.

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As a graduate student, you might find yourself well on the way with your education and ‘ABD’ (all but dissertation). Day after day, you tell yourself that you really, really intend to start writing your paper. After all, you’ve collected all the data, analysed them many times and entered them into tables.

But then you start thinking that maybe you need just a few more data. Perhaps, too, you should try a different analysis technique. And what if the tables you used aren’t the right ones, or need to be formatted differently?

Many of the thousands of researchers we have worked with are constantly being tripped up by finicky, niggling details that keep them from writing up their research. Every day, they mean to start, but every day, something gets in their way or seems more important — and this can go on for years. Some very common obstacles get in the way of high-quality, high-quantity scholarly writing, but powerful, evidence-based techniques can help researchers to overcome repetitive and unhelpful habits and get moving (see ‘How to get out of a dissertation-writing rut’).

WRITING MYTHS
The biggest impediments to scholarly writing are long-held myths that seem to get passed down through the academic ranks like precious but unhelpful ancient wisdom. The first is the Readiness Myth — “I should write when I feel ready, and I don’t feel ready yet”. The secret to high output is that you have to write before you feel ready, because you might never reach that point. Researchers read endlessly and conduct countless experiments in the belief that it will eventually make them feel ready to write — we call these habits readitis and experimentitis. But ironically, all that reading and experimenting often makes them less likely to write, and more confused. So the first way to speed up your writing is to stop waiting, stop reading and experimenting, and start writing. You won’t feel ready, but you have to do it anyway.

This brings us to the second myth, the Clarity Myth — “I should get it all clear in my head first, and then write it down”. This isn’t how writing works in practice. You have probably had the experience in which you were sure about how a paper would go until you started to write it. Then you discovered that there were inconsistencies, or it didn’t flow well or the links didn’t make sense. This tells you that it wasn’t all that coherent in your head, after all.

In fact, writing clarifies your thinking. Writing is not recording — you don’t just take
Better teaching needed

The United States must boost the number of people pursuing degrees and careers in science, technology, engineering and maths (STEM), says a 23 June report from the National Academies. The nation should foster better education in schools, said the report, Successful K–12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics. The authors also recommend improving STEM literacy to fill STEM-related jobs that do not require advanced degrees, such as science teacher or engineering technician. The US Bureau of Labor Statistics says that only 4 of the 16 STEM-related jobs with the largest projected growth by 2018 need an advanced degree.

JOB-HUNTING TOOLS

Inside information

An online forum aims to give job seekers inside information about employers. CareerBliss (www.careerbliss.com/company-questions) in Irvine, California, matches applicants with current employees who can answer queries. The forum has respondents for about 500 companies, universities and organizations in the United States including biopharmaceutical firms such as Pfizer and Genentech, says spokeswoman Alia Henson. Questions can be on any topic, including research funding or grant opportunities.

FAMILIES

Women want flexibility

Female early-career researchers with newborn babies are most likely to want to keep their jobs if their employers provide security and flexibility, including the right to leave work to care for an ill child, a study finds. Published on 23 May in the bi-monthly Journal of Applied Psychology (D. S. Carlson et al. J. Appl. Psychol. doi:10.1037/a0023964; 2011), the study reports better job retention for new mothers who stay physically and mentally healthy as a result of accommodations. Lead author Dawn Carlson, a professor of management at Baylor University in Waco, Texas, says that scientists should check how a prospective employer handles the needs of families before accepting an offer. To retain female staff, universities should allow maximum flexibility. “Whether extending the tenure clock or some other measure, the organization has to figure out a way to support these people if they want to reduce turnover,” says Carlson.

SNACK WRITING

Once researchers get beyond the myths that stop them writing, they often declare that they can’t possibly write anything eloquent, insightful or clever unless they have a whole day or week to do it in. And because they don’t have that amount of time, they conclude that there is no point in starting. We call this ‘binge writing’. Binge writing isn’t inherently wrong; it’s just that, for busy people, it can greatly reduce the amount of writing they do. The alternative is ‘snack writing’. This means short — but regular — writing sessions. We suggest about 1–2 hours a day for graduate students who are writing a dissertation, and about 45–90 minutes a day for researchers trying to increase their publication output.

Many researchers tell us that they couldn’t possibly get anything useful written in that amount of time. The good news is that studies (which we have replicated many times in practice) show that academics who write for 30 minutes a day produce, on average, more peer-reviewed publications than academics who write for big blocks of time. But the ‘snacks’ have to be regular — 45 minutes once a week doesn’t work, but 45 minutes a day 5 days a week does wonders. When possible, try snack writing first thing in the morning. Our experience suggests that this increases the chances of success by minimizing distractions and ensuring that you have sufficient energy to write clever things. However, for snack writing to lead to really high-quality results, you also need to write in a very specific way.

WHAT IS WRITING?

Before we tell you what writing is, we should tell you what it isn’t, at least for the purposes of snack writing.

Writing isn’t editing: you should not spend your brief snack-writing time trying to find the perfect word or getting your grammar right. Writing isn’t reading journal articles for research: write first and read afterwards, so that your writing shows you what you need to read. Writing isn’t referencing: when you make that killer argument and want to reference Smith and Brown (2006; or maybe it was 2007?), don’t stop and look it up. Write “Smith & Brown (2007)” and keep going. You can look up the reference later. Furthermore, writing is not formatting, literature searching, photocopying, e-mailing or nosing around on Facebook. Writing — at least for your snack-writing sessions — means putting new words on the page or substantially rewriting existing words.

So, you might ask, when do you do all the editing, reading and other associated tasks? The answer is, any time in the other 23 hours and 15 minutes of the day — just not during your snack-writing time.

So stop waiting to feel ready. Get started with some short and regular writing snacks. What you write won’t be perfect at first, but you will be on your way to becoming a prolific academic writer.

Maria Gardiner and Hugh Kearns lecture and research in psychology at Flinders University in Adelaide, Australia, and run workshops for graduate students and advisers (see ithinkwell.com.au).

TOP TIPS

How to get out of a dissertation–writing rut

● Write before you feel ready — because you might never feel ready. It’s amazing how people magically feel ready when there is an imminent deadline.
● Don’t wait to have a clear picture of the paper. As you start putting down your ideas, you may actually clarify them.
● Snack write — work in short, frequent bursts instead of waiting to sit down for big blocks of time. Those blocks hardly ever come, and when they do, they don’t usually get used very productively.
● Set specific times in your schedule for writing — don’t leave it to chance, because chances are it won’t happen.
● Writing means putting new words on the page or substantially rewriting old words. It does not mean editing, reading, referencing or formatting — and it definitely does not mean composing e-mails.
● If you refrain from writing because you worry that what you write won’t be good enough, try noting the adage that to write is to lead to really high-quality results, you also need to write in a very specific way.

“Get the words down on the page — no matter how bad you think they look or sound at first.”
The write stuff

Michelle Francl suggests that students should be trained to write in a fashion similar to how they are taught the principles and practice of NMR spectroscopy — by providing them with a limited set of patterns and parameters.

It’s almost always a stealth attack. There is a bit of rustling outside my door, and then, with an unmistakable swish, a neatly stapled stack of paper flitters across my office floor, coming to rest against the filing cabinet with a gentle sigh of relief, echoed, no doubt, by its fleeing author: another undergraduate honours paper has just arrived. Doctoral candidates warily gauge the gap between door and floor, decide rightly that their work will never pass through, momentarily worry that this is an omen for their defence, and deposit their dissertations with resigned ‘thunks’ in the bin on the wall. The end of the semester has arrived when my colleagues and I drag our students away from their comfortable lab benches, metaphorically tie them to chairs and consign them to the minor hell of writing a final research report.

The process can be painful for all concerned, and as a former director of my college’s first-year writing programme, suffering students and faculty alike find their way to my office. One colleague sends me a floric snippet of an introduction, wondering what sort of comment will help her student find an appropriately restrained tone; another arrives clutching a thoroughly marked-up chapter of a doctoral dissertation, “I know there is something very wrong with the grammar here, but can’t precisely say what.” A distraught graduate student appears with a half-page of text, “I can’t figure out what else to say...” — after two years of research. “My advisor just says my thesis doesn’t sound scientific — until they learned to do it smoothly and instinctively.”

Direct instruction for writing in advanced lab courses and research groups often begins and ends by describing the surface features of scientific writing, such as the typical organization of a journal article, formatting rules specific to chemistry or how to write descriptive subheadings. We say: sort your collection of research material into these bins — introduction, methods, results, discussion and conclusion; references should be formatted in American Chemical Society style; use sequential bold numbers for structures. What we often fail to provide alongside this exoskeleton is explicit rhetorical advice, a clear guide to recognizing and constructing the arguments we know are most compelling, and the lexical devices used to deploy them. We shy away, too, from offering them up-front advice on phrasing, and what we do provide is often conflicting. Use (or avoid) the passive voice. Don’t use (do use) the first person.

As a result, many of the student research papers I see, whether written for an upper-division lab course, or as a draft of a thesis, superficially resemble a chemistry journal article, but don’t read like one. So I prod their texts with my pen, wincing at awkward phrasings and rhetorical missteps, coaxing sentences and sections into something that reads well to a chemist. Then I get tired and start marking all the spots where they forgot to make a structure number bold. The cycle repeats, with the hope they will eventually catch on to the tone and strategies chemists commonly wield and be able to reproduce them smoothly and instinctively.

The entire enterprise reminds me of teaching my two sons to drive a stick shift. They couldn’t see what my feet were doing, and after three decades of driving a standard transmission my moves were so instinctive I couldn’t describe how I did it except in the broadest terms. When they finally took the wheel, there was a great deal of lurching and stalling — and wincing by the instructor — until they learned to do it smoothly and instinctively. It took a toll on my psyche as well as on my transmission and I suspect the...
teaching of writing extracts a similar pound of flesh from my colleagues. While there are many excellent books and courses on writing for scientists, students and faculty are often reluctant to take time away from chemistry coursework or research to focus so exclusively on the practice of writing. It's unproductive, at least in the short term, and we worry that students will have difficulty carrying over what they learn in isolation to their research work. Is there a way, I wonder, to teach chemistry students to write in the same way as we teach them to acquire and interpret an NMR spectrum? We don’t start by having students read the entire manual, nor do we demand they know how to get from the notion of multiplets. Instead we hand them a cheat sheet for using the instrument, introduce them to a limited set of spectral patterns they should recognize, and let them try their hand.

What might a one-page cheat sheet for writing a well-argued chemistry paper look like? George Whitesides’s classic paper on how to write a paper distills the advice he gives to his own research students into three journal pages. Starting from the classic organization structure, Whitesides offers some excellent advice on the initial phases of the writing process, particularly how to turn an unruly set of notes and results into a neatly organized packet of material ready to write from. His rhetorical advice is less explicit. Reading between the lines an experienced writer can see how the iterative process he advocates — of identifying and planning additional work in the course of writing an outline — would lead to tighter arguments. In my experience, novice writers miss these cues without the informal individual coaching a research advisor and other group members provide in comments and conversations, a process difficult to stage on the larger scale of undergraduate teaching labs.

Even the strongest writers among my students express a desire for more straightforward discussions of rhetorical structure. They want to be able to see how the surface patterns — the organizational structure and particular phrases used — connect to the arguments being made by the authors, in much the same way they can read an NMR spectrum, where the surface features — the splitting patterns and chemical shifts — signal to the trained eye the presence of particular molecular features. Recent pedagogical research concurs. Although Whitesides advises students put aside writing the abstract until the end, Cheryl Glenn and Melissa Goldthwaite suggest that an early draft of an abstract might be preferable. They assert that the ability to localize an argument, that is to succinctly state an argument and the specific material that supports it rather than pull it piecemeal from a larger body of text, is an effective way to sharpen and deepen a thesis. This suggests I would get a better first draft of a research report if, instead of giving students a list of sections and a formatting guide, I asked them first to show me the core of their research question and their line of argument — stated baldly without the usual hedges and qualifiers — in a form that is compact enough to see the whole structure at once. And just as we give them reasonable values for NMR settings, I can give them a framework and some language with which they can do just that (see illustration).

Once they launch into refining their arguments, my students also need a quick guide to the lines of argument most frequently encountered and how they might appear in academic writing, including the typical language in which they are couched. Just as a chemical shift of 7.2 ppm points to the likely presence of a proton attached to a phenyl ring, the phrase ‘it is apparent that’ points to data that the authors consider not obvious, but highly significant. Students need a phrase guide equivalent to the classic diagram of expected NMR proton shift ranges found in any organic chemistry text. John Morley, at the University of Manchester, has compiled just such a list in the Academic Phrasebank, organized by where particular phrases most often appear, for example, in conclusions, and by commonly used arguments, for example, what form comparisons take — ‘X is different from Y in a number of respects...’ or ‘In contrast to X, Y was observed’.

The phrasebank offers novice readers of academic work a catalogue of phrase-level surface markers of underlying rhetorical structure, and novice writers enough contextualized examples to help them put their arguments in language that won't make their advisors wince.

Our students’ research will not speak for itself, they must give it a persuasive and authoritative voice, and it’s up to us to help them find that voice. I suggest we recognize that for novice chemists, connecting the structure of a paper to its lines of argument can be as hard as deducing structure from an NMR spectrum, and that what we know about efficiently and effectively teaching NMR spectroscopy can be applied to the teaching of writing. In teaching students to write, we should let the surface markers take a back seat to developing their awareness of the underlying arguments scientists use. Forget whether they have used bold face for structure numbers, ask them instead if they can boldly state their argument.

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In academic work students are often expected to give definitions of key words and phrases in order to demonstrate to their tutors that they understand these terms clearly. More generally, however, academic writers define terms so that their readers understand exactly what is meant when certain key terms are used. When important words are not clearly understood misinterpretation may result. In fact, many disagreements (academic, legal, diplomatic, personal) arise as a result of different interpretations of the same term. In academic writing, teachers and their students often have to explore these differing interpretations before moving on to study a topic.

**Introductory phrases**

The term ‘X’ was first used by …
The term ‘X’ can be traced back to …
Previous studies mostly defined X as …
The term ‘X’ was introduced by Smith in her …
Historically, the term ‘X’ has been used to describe …
It is necessary here to clarify exactly what is meant by …
This shows a need to be explicit about exactly what is meant by the word ‘X’.

**Simple three-part definitions**

<table>
<thead>
<tr>
<th>Term</th>
<th>Applicability</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A university is</td>
<td>an institution</td>
<td>where knowledge is produced and passed on to others</td>
</tr>
<tr>
<td>Social Economics may be defined as</td>
<td>the branch of economics</td>
<td>[which is] concerned with the measurement, causes, and consequences of social problems.</td>
</tr>
<tr>
<td>Research may be defined as</td>
<td>a systematic process</td>
<td>which consists of three elements or components: (1) a question, problem, or hypothesis, (2) data, and (3) analysis and interpretation of data.</td>
</tr>
<tr>
<td>Braille is</td>
<td>a system</td>
<td>of touch reading and writing for blind people in which raised dots on paper represent the letters of the alphabet.</td>
</tr>
</tbody>
</table>

**General meanings or application of meanings**

The term ‘X’ refers to …
X can broadly be defined as …
X can be loosely described as …
The term ‘X’ encompasses A), B), and C).
X can be defined as … It encompasses …
The term ‘X’ has come to be used to refer to …
The term ‘X’ is generally understood to mean …
In the literature, the term tends to be used to refer to …
In broad terms, X can be defined as any stimulus that is …
Whereas X refers to the operations of …, Y refers to the …
The broad use of the term ‘X’ is sometimes equated with …
The term ‘X’ has been used to refer to situations in which …
The term ‘disease’ refers to a biological event characterised by …
The term ‘X’ is a relatively new name for a Y, commonly referred to as …
Defined as X, obesity is now considered a worldwide epidemic and is associated with …

Indicating varying definitions

The definition of X has evolved.
There are multiple definitions of X.
Several definitions of X have been proposed.
In the field of X, various definitions of X are found.
The term ‘X’ embodies a multitude of concepts which …
This term has two overlapping, even slightly confusing meanings.
Widely varying definitions of X have emerged (Smith and Jones, 1999).
Despite its common usage, X is used in different disciplines to mean different things.
Since the definition of X varies among researchers, it is important to clarify how the term is …

The meaning of this term has evolved.
has varied over time.
has been extended to refer to …
has been broadened in recent years.
has not been consistent throughout …
has changed somewhat from its original definition …

Indicating difficulties in defining a term

X is a contested term.
X is a rather nebulous term …
X is challenging to define because …
A precise definition of X has proved elusive.
A generally accepted definition of X is lacking.
Unfortunately, X remains a poorly defined term.
There is no agreed definition on what constitutes …
There is little consensus about what X actually means.
There is a degree of uncertainty around the terminology in …
These terms are often used interchangeably and without precision.
Numerous terms are used to describe X, the most common of which are ….
The definition of X varies in the literature and there is terminological confusion.
Smith (2001) identified four abilities that might be subsumed under the term ‘X’: a) …
‘X’ is a term frequently used in the literature, but to date there is no consensus about …
X is a commonly-used notion in psychology and yet it is a concept difficult to define precisely.
Although differences of opinion still exist, there appears to be some agreement that X refers to …

Specifying terms that are used in an essay or thesis

The term ‘X’ is used here to refer to …
In the present study, X is defined as …
The term ‘X’ will be used solely when referring to …
In this essay, the term ‘X’ will be used in its broadest sense to refer to all …
In this paper, the term that will be used to describe this phenomenon is ‘X’.
In this dissertation, the terms ‘X’ and ‘Y’ are used interchangeably to mean …
Throughout this thesis, the term ‘X’ is used to refer to informal systems as well as …
While a variety of definitions of the term ‘X’ have been suggested, this paper will use the definition first suggested by Smith (1968) who saw it as …

Referring to people’s definitions: author prominent

For Smith (2001), X means …
Smith (2001) uses the term ‘X’ to refer to …
Smith (1954) was apparently the first to use the term …
In 1987, psychologist John Smith popularized the term ‘X’ to describe …
According to a definition provided by Smith (2001:23), X is ‘the maximally …
This definition is close to those of Smith (2012) and Jones (2013) who define X as …
Smith, has shown that, as late as 1920, Jones was using the term ‘X’ to refer to particular …
One of the first people to define nursing was Florence Nightingale (1860), who wrote: ‘… …’
Chomsky writes that a grammar is a ‘device of some sort for producing the ….’ (1957, p.11). Aristotle defines the imagination as ‘the movement which results upon an actual sensation.’
Smith et al. (2002) have provided a new definition of health: ‘health is a state of being with …

Referring to people’s definitions: author non-prominent

X is defined by Smith (2003: 119) as ‘… …’
The term ‘X’ is used by Smith (2001) to refer to …
X is, for Smith (2012), the situation which occurs when …
A further definition of X is given by Smith (1982) who describes …
The term ‘X’ is used by Aristotle in four overlapping senses. First, it is the underlying …
X is the degree to which an assessment process or device measures … (Smith et al., 1986).

Commenting on a definition

<table>
<thead>
<tr>
<th>This definition</th>
<th>includes …</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>allows for …</td>
</tr>
<tr>
<td></td>
<td>highlights the …</td>
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<tr>
<td></td>
<td>helps distinguish …</td>
</tr>
<tr>
<td></td>
<td>takes into account …</td>
</tr>
<tr>
<td></td>
<td>poses a problem for …</td>
</tr>
<tr>
<td></td>
<td>will continue to evolve.</td>
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<tr>
<td></td>
<td>can vary depending on …</td>
</tr>
<tr>
<td></td>
<td>was agreed upon after …</td>
</tr>
<tr>
<td></td>
<td>has been broadened to include …</td>
</tr>
</tbody>
</table>

The following definition is intended to …
modelled on …
too simplistic:
useful because …
problematic as …
inadequate since …
in need of revision since …
important for what it excludes.
the most precise produced so far.
My favourite revision strategy is the reverse outline. Simply stated, a reverse outline is an outline that we create from an existing text; rather than turning an outline into a text, we are turning a text into an outline. Regardless of whether or not you create an outline before you write, creating one after you have written a first draft can be invaluable. A reverse outline will reveal the structure—and thus the structural problems—of a text.

The steps to creating a reverse outline are simple:

1. **Number the paragraphs**
2. **Identify the topic of each paragraph**
3. **Arrange these topics into an outline**
4. **Analyze this outline**
5. **Create a revised outline**
6. **Reorganize the text according to the revised outline**
7. **Check for topic sentences and cohesion**

### Step 1: Number the paragraphs
The basic unit of a reverse outline is the paragraph, so the first step is to number the paragraphs. The simple act of directing our attention towards paragraphs—and thus away from sentences—can be helpful: while writers naturally focus on sentences, we must always remember that our readers are naturally inclined to focus on paragraphs.

### Step 2: Identify the topic of each paragraph
Once the paragraphs have been numbered, try to identify a topic in each one. Since you are looking at an early draft, this process will be challenging: not all paragraphs will have topics and not all topics will be expressed neatly in a single paragraph. When doing a reverse outline, it is crucial to remember that you are trying to make evident what is there rather than what ought to be there. In other words, this step is diagnostic. You are simply noting what each paragraph was trying to do, for better or worse. Once you’ve done that, you can observe whether topic sentences can be found and make a note of paragraph length. Again, at this stage, you are observing rather than judging or remedying. Does the paragraph have a topic sentence? Yes or no? And how long is the paragraph? The latter can be recorded in word count or in more qualitative terms as short, average, or long.

### Step 3: Arrange these topics into an outline
To create this preliminary outline, you are doing nothing more than listing the topics that you’ve identified, paragraph by paragraph. The crucial thing at this stage is to leave your original text alone and work just on the outline; you are trying to keep yourself away from the muddling effect of the detailed content in your own writing. As an advocate for your future reader, you are trying to see past the detail and look just at essential structure.

### Step 4: Analyze this outline
The next step is to analyze this outline, paying particular attention to the logic and proportionality of your internal organization. Understanding the logic involves observing the way elements have been placed in relation to one another. Understanding the proportionality involves observing how much space is being devoted to each element. This step is the bridge between noting what you have and preparing to create something new.
Step 5: Create a revised outline
During steps 3 and 4, you've been working with a list of topics; in step 5, you will have to transform that list into a genuine outline. Now that you can see all the topics and can start to see possible weaknesses in either your ordering of points or your allocation of space, you are ready to create a better outline for the text. You have the best of both worlds at this point: you know a great deal that you didn't know before you started writing, but you are still working at a level of abstraction that will keep you from getting bogged down in the details.

Step 6: Reorganize the text according to the revised outline
Here comes the hard part. In steps 3, 4, and 5, you've been working with the outline. Now it's time to use this new outline to transform the text. And unless you are an incredibly confident writer, you will find this scary. That initial draft—even with all the flaws that you've just uncovered—will generally have a real hold on you. That hold comes from the legitimate fear that you might take away existing coherence and flow without being able to replace it with something better. At this point, you need faith, faith in the new outline and faith in your ability to transform your text into something better. Practically, what you do here is move the text around to reflect the organization of the new outline. The result, at this point, can be pretty rough. If you take a few paragraphs from the second half of a paper, for instance, and move them up to an earlier section, they can't possibly sit right. The time for massaging everything into a cohesive whole will come, but for now you must trust that the new outline has allowed you to devise a new and improved configuration of your text.

Step 7: Check for topic sentences and cohesion
The final step is to pay attention to the way your new paragraphs work. The new and improved configuration will be, needless to say, both better and worse. It will be better because it will reflect your careful and clearheaded analysis of what it needs to do; it will be worse because it will still bear too many traces of its earlier self. To get a head start on the next stages of revision, you can identify whether you have topic sentences early in your paragraphs and whether those paragraphs use their length effectively to develop clear topics. While there will still be lots of work to do, you can turn to that work secure in the knowledge that you have created an effective structure for this text. Polishing a text is time-consuming work, but it is easier and more efficient when you are working on a text that you know to be well-organized and well-proportioned.

In sum, the reverse outline is an effective strategy because it can create an objective distance between you and your text. Reverse outlining gives us a way into a text that might otherwise resist our editorial efforts. We often find our early drafts disconcerting: we know they are flawed but changing them can still seem risky. A reverse outline can give us purpose and direction as we undertake the valuable project of restructuring our written work.