

INSTITUTE FOR SUSTAINABLE FUTURES

IDEAS FOR GOOD PRACTICE

ZEN AND THE ART OF TRANSDISCIPLINARY POSTGRADUATE STUDIES

THINK.
CHANGE.
DO



Institute for
**Sustainable
Futures**



Quality in Interdisciplinary and Transdisciplinary Postgraduate Research and its Supervision

IDEAS FOR GOOD PRACTICE

Edited by

Cynthia Mitchell

Professor of Sustainability

Institute for Sustainable Futures

University of Technology Sydney



Support for this Fellowship has been provided by the Australian Learning and Teaching Council, an initiative of the Australian Government Department of Education, Employment and Workplace Relations. The views expressed in this report do not necessarily reflect the views of the Australian Learning and Teaching Council Ltd.

This work is published under the terms of the Creative Commons Attribution-Noncommercial-ShareAlike 2.5 Australia Licence. Under this Licence you are free to copy, distribute, display and perform the work and to make derivative works.

Attribution: You must attribute the work to the original authors and include the following statement: Support for the original work was provided by the Australian Learning and Teaching Council Ltd, an initiative of the Australian Government Department of Education, Employment and Workplace Relations.

Noncommercial: You may not use this work for commercial purposes.

Share Alike. If you alter, transform, or build on this work, you may distribute the resulting work only under a licence identical to this one.

For any reuse or distribution, you must make clear to others the licence terms of this work.

Any of these conditions can be waived if you get permission from the copyright holder.

To view a copy of this licence, visit <http://creativecommons.org/licenses/by/2.5/au/> or send a letter to Creative Commons, 543 Howard Street, 5th Floor, San Francisco, California, 94105, USA.

Requests and inquiries concerning these rights should be addressed to the Australian Learning and Teaching Council, PO Box 2375, Strawberry Hills NSW 2012 or through the website: <http://www.altc.edu.au>

Disclaimer: While all due care and attention has been taken to establish the accuracy of the material published, UTS/ISF and the authors disclaim liability for any loss that may arise from any person acting in reliance upon the contents of this document.

2009

Please cite this report as: Mitchell C A (ed.) 2009. Quality in Interdisciplinary and Transdisciplinary Postgraduate Research and its Supervision: Ideas for Good Practice. Prepared for ALTC Fellowship: Zen and the Art of Transdisciplinary Postgraduate Studies. Institute for Sustainable Futures, University of Technology, Sydney.

INTRODUCTION

This document contains a collection of ideas for supervisors and students for activities and research approaches that will facilitate high quality outcomes from inter- and trans-disciplinary postgraduate research.

Each idea is explored on a single page: the exploration includes a brief explanation, identifies the quality criteria it supports when the research outputs are evaluated, suggests the stage in candidature and/or triggers for when the idea could be applied for best effect, and notes what it might take and possible resources.

The ideas are organised into categories. The distinctions between the categories are sometimes blurry. So, this document can be read from cover to cover, or can be dipped into for ideas on addressing specific issues, like clarifying research questions. Many ideas and tools can be used in different ways, so they are mentioned in different sections e.g. argument maps can be used to deconstruct the literature as well as to structure one's own writing.

In general, the ideas are for supervisors to suggest for their students. So the main role for the supervisor is to notice the opportunity to implement the idea, to provide the initiative, to guide the student in its implementation, and to reflect with the student on what happened as a result.

What is here is a starting point. A set of suggestions. An eclectic collection. Feel free to use and modify. Please, do share, and do so respectfully.

I'd very much like to hear about your experiences of using these ideas – what worked, what didn't, what you learned, what additional resources you found helpful, what changes (additions, deletions, modifications) you would suggest, etc etc.

Contact me at Cynthia.Mitchell@uts.edu.au

www.isf.uts.edu.au

Ph: +61 (0)2 9514 4953

Cynthia Mitchell

Institute for Sustainable Futures

University of Technology Sydney

PO Box 123 Broadway NSW 2007

Level 11/Bldg 10, 235 Jones St Broadway

Thanks in advance.

ACKNOWLEDGEMENTS

The sparks and various of the details of the ideas given here were created at two separate gatherings of supervisors and students involved in interdisciplinary (ID) and transdisciplinary (TD) research. Sometimes the ideas came from individuals, sometimes they came from conversations in smaller groups, and some are from larger group discussions. Some similar ideas have been melded together. All have been extended and edited. For this set of reasons, we acknowledge all the individuals here, rather than attributing specific ideas to specific individuals.

As part of an ALTC Fellowship, a 2-day retreat was held in July 2008 for a small group of experienced supervisors and students who came together specifically to explore and co-create formative resources for quality ID and TD postgraduate research. The participants were:

Dr Kumi Abeysuriya	Assoc Prof Simon Barrie	Dr Anna Carew	Dr Kath Fisher
Prof Ray Ison	Dr Catherine Manathunga	Prof Dora Marinova	Prof Brian Martin
Prof Cynthia Mitchell	Jane Palmer	Dr Chris Riedy	Dr Juliet Willetts

Additional ideas, as well as additions and revisions of existing ideas, emerged at ISF's Annual Postgraduate Retreat in March 2009, attended by ISF students and supervisors, including:

Dr Kumi Abeysuriya	Christiane Baumann	Viv Benton	Assoc Prof Paul Bryce
Carlia Cooper	Dana Cordell	Chris Dunstan	Dena Fam
Dr Simon Fane	Dr Damien Giurco	Suzanne Grob	Jenny Kent
Sarina Kilham	Prof Cynthia Mitchell	Candice Moy	Assoc Prof Michael Paddon
Dr Roel Plant	Dr Jason Prior	Tani Shaw	Tanzi Smith
Dr Juliet Willetts	Phil Willis	Keren Winterford	Prof Stuart White

Table of Contents

Introduction	iii
Acknowledgements	iv
SECTION 0 : BUILDING SUPERVISION RELATIONSHIPS	1
Get on a role	1
Collaborative Cross-Disciplinary Supervision	2
Periodic group supervision	3
Write as a Student-Supervisor Team	4
Write/ Present a Piece of Work	5
SECTION 1: POSITIONING YOURSELF	6
Systemic inquiry into a Transdisciplinary PhD	7
Supervisor as Devil’s Advocate	8
Student Devil’s Advocate Role Play	9
Where did I come from?.....	10
Lost in Translation 1	11
Explore Disciplinary Research Cultures.....	12
Become familiar with System(at)ic tools	13
SECTION 2 : DEEPENING REFLECTION	14
Keep a Personal Journal	15
Find your heroes	16
Know your story	17
Reflect on reflections.....	18
Create the critical reflection habit	19
Develop layered reflexivity	20
Critical Friends	21
SECTION 3 : ENGAGING WITH LITERATURE	22
Map the Literature	23
Distillation 101	24
Meta Macro Micro Review.....	25
Extract the Argument	26
Systemic Argument Maps	27
Research Pattern Analysis	28

Surface the Metaphors	29
Trace different Pedigrees	30
SECTION 4 : INCREASING EXTERNAL/CRITICAL ENGAGEMENT	31
Lost in Translation 2	32
Present to Different Disciplines	33
Casual Conversations	34
Test your Pertinance	35
World's Hairiest Questions	36
Engage your critics	37
SECTION 5 : CLARIFYING RESEARCH QUESTION/RESEARCH FOCUS	38
Alignment graphic	39
Meta - epistemological check in	40
Clarify Research Questions	41
Systemic Diagramming	42
Under the spotlight	43
Multi-dimensional mind mapping	44
SECTION 6 : DISTILLING & COMMUNICATING YOUR CLAIMS	45
Early Seminar to a Friendly Audience	46
Articulation of Claims	47
Elevator Pitches	48
Newspaper Headline	49
SECTION 7 : STRUCTURING A COHERENT ARGUMENT	50
Topic Sentence Restructuring	51
Mindmap the Argument	52
Story board the Argument	53
Analysis in Pictures	54
Alternative thesis structures	55

SECTION 0 : BUILDING SUPERVISION RELATIONSHIPS

GET ON A ROLE

What's the big idea?

- Evaluate and the negotiate expectations of the roles and responsibilities of supervisor and student.
- Student and supervisor fill in the questionnaire independently and then discuss, and negotiate on issues where their views diverge.

Why is this such a good idea?

It avoids mismatch of expectations about the relationship between supervisor and student. Sets a foundation for resolving difficulties through honest, direct communication.

Which criteria does this address?

This idea provides the foundation for all the criteria because it supports good communication between the supervisor/s and student.

When might this be useful?

In the early days, while working out what to do. It could be repeated at later stages as expectations change with the development of the supervisor student relationship.

What would it take to make this work?

Mutual desire to establish honest and open communications in relationship.

What resources might help?

James, R. & Baldwin, G. 1999, *Eleven practices of effective postgraduate supervisors*, Centre for the Study of Higher Education and the School of Graduate Studies, The University of Melbourne.

Available from www.cshe.unimelb.edu.au/pdfs/11practices.pdf. (This is also handy for students)

Role perception rating scale

(by Ingrid Moses (1985), *Supervising Postgraduates*. Campbelltown: HERSDA Inc.)

Instructions

Read each pair of statements listed on this sheet. Each expresses a standpoint supervisors may take. You may not agree fully with either of the statements. Therefore, please estimate your position and mark it on the scale. For example, if you believe very strongly that supervisors should select the research topic you would circle (1) on scale 1.

Topic/course of study

- | | | |
|---|-----------|---|
| 1 It is the supervisor's responsibility to select a promising topic | 1 2 3 4 5 | It is the student's responsibility to select a promising topic |
| 2 In the end, it is up to the supervisor to decide which theoretical frame of reference is most appropriate | 1 2 3 4 5 | Students have a right to choose their own theoretical standpoint even if it conflicts with the supervisor's |
| 3 The supervisor should direct the student in the development of an appropriate program of research and study | 1 2 3 4 5 | The supervisor should act mainly as a sounding board for the student's ideas and give advice |

Contact/Involvement

- | | | |
|--|-----------|--|
| 4 Staff-student relationships are purely professional and personal matters should not intrude. | 1 2 3 4 5 | Close personal relationships are essential for successful supervision |
| 5 The supervisor should initiate frequent meetings with the student | 1 2 3 4 5 | It is up to the student to decide when s/he wants meetings with the supervisor |
| 6 The supervisor should know at all times on which problems the student is working | 1 2 3 4 5 | Students should have the opportunity to find their own way without having to account for how they spend their time |
| 7 The supervisor should terminate supervision if s/he thinks the project is beyond the student | 1 2 3 4 5 | The supervisor should support the student right through until the thesis has been submitted, regardless of his/her opinion of the work |

The Thesis

- | | | |
|---|-----------|--|
| 8 The supervisor should ensure that the thesis is finished not much later than the minimum period | 1 2 3 4 5 | As long as the student works steadily s/he can take as long as s/he needs to finish the work |
| 9 The supervisor has direct responsibility for the standard of the thesis | 1 2 3 4 5 | The supervisor advises only and leaves all decisions concerning content, format and standards to the student |
| 10 The supervisor should insist on seeing drafts of the every section of the thesis in order to review them | 1 2 3 4 5 | It is up to the student to ask for constructive criticism from the supervisor |
| 11 The supervisor should assist in the actual writing of the thesis if the student has difficulties | 1 2 3 4 5 | The supervisor should be wary of contributing too much to the thesis |

COLLABORATIVE CROSS-DISCIPLINARY SUPERVISION

What's the big idea?

- Supervisory panel covering different disciplinary areas that works together as a mutual learning team.
- Joint, rather than separate meetings
- Supervisors model a process of ID/TD engagement (i.e. constructive, critical etc)

Why is this such a good idea?

- Encourages critical reflection/ learning for all involved
- Makes disciplinary conflicts explicit allowing joint work on resolution
- Student is not left to resolve disputes on their own or forced to choose sides

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

Throughout the candidature – whenever different supervisors are engaged and definitely at critical points, such as doctoral assessment processes, interpreting results and outcomes, writing key chapters, choosing examiners etc

What would it take to make this work?

Key is for supervisors to commit to joint meetings, and to surfacing discomfort, and working towards accommodations of difference

What resources might help?

Reflective writings on the reality of inter- and transdisciplinary work, such as R Ison (2008) Methodological challenges of trans-disciplinary research: some systemic reflections. *Natures Sciences Sociétés* 16:241-251

or J Klabbers (2009) The Bridge Crack'd: A Critical Look at Interdisciplinary Relations. *International Relations* 23(1):119-125

Peter Checkland's writings on soft systems methodology and the processes of accommodation – the most recent text is a good summary: Peter Checkland and John Poulter (2006) 'Learning For Action: A Short Definitive Account of Soft Systems Methodology, and its use Practitioners, Teachers and Students' published by Wiley.

PERIODIC GROUP SUPERVISION

What's the big idea?

- Periodic group supervision meetings between a supervisor and all his/her students, to build a ID/TD PhD research community
- Supervisor organises meetings for all students s/he supervisors to cover common ground, to share research, read/present papers of common interest etc. (students may or may not share a common research area or theory base).
- Provides opportunity for students to understand/see how other students interact with supervisor. Such an understanding could provide students with a greater appreciation of how their own candidature process is unique, different or commonly shared by other students.

Why is this such a good idea?

These group supervision sessions could help with:

- Building a supportive community of PhD researchers in ID/TD areas.
- Seeing how others handle the breadth/depth literature conundrum
- Discussing the roles and practices of supervisors how students would like to see it change or improve
- Making students aware of how they self organize their learning and research, and conversely how others organize their learning and research.
- Learning new techniques and skills from other students at various stages of the candidature process.
- Becoming aware that the intensity and types of challenges vary for individual students.

- Allowing students to understand that there are various ways in which the passage of candidature and the relationship between student and supervisor can be constructed.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

- ✓ Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

Throughout candidature

What would it take to make this work?

Little effort, just some organisation.

What resources might help?

Lead supervisor provides chocolate biscuits.

WRITE AS A STUDENT-SUPERVISOR TEAM

What's the big idea?

Shift supervisor role from hierarchical role to facilitator/ fellow researcher/ fellow traveller on the journey through the process of co-writing.

Supervisor validates student and their contribution.

Why is this such a good idea?

- Assists students level of confidence, sense of support
- Changes the dynamics, builds trust
- Exposes and makes transparent the supervisor's writing process
- Helps supervisor find a good balance between a "supervisor" role (e.g. managing process/time; making assessments, judgements, critiques) and playing a supportive, sharing role

Which criteria does this address?

- ✓ **All criteria, but more pronounced for those ticked**
 - ✓ Critically aware, coherent argument
- Critical, pluralistic engagement with appropriate literature and other artefacts
- Evidence of critical reflection/reflexivity on own work
- Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ All stages
- ✓ Writing a paper as co-authors

What would it take to make this work?

Trust

Good communication

For the supervisor, may involve letting go of being the 'expert'

For the supervisor, making the time to be integrally involved and not just play a review role

What resources might help?

Having already helped the student to develop strong writing skills

WRITE/ PRESENT A PIECE OF WORK

What's the big idea?

Students are asked to prepare a piece of written work or give a presentation on a sub-topic of their doctoral project for review by supervisors (and advisors) – especially important when they are from different disciplinary backgrounds.

Why is this such a good idea?

- Gives student exposure to different supervisor perspectives.
- To give supervisors something tangible to engage with e.g. to critique writing style & content.
- To help student clarify thinking
- Provides student with a short, do-able task to focus on
- To help student to take on reader or audience perspective (sign-posting, writing for target audience)

Which criteria does this address?

- ✓ Critically aware, coherent argument
- Critical, pluralistic engagement with appropriate literature and other artefacts
- Evidence of critical reflection/reflexivity on own work
- Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
- Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Ongoing throughout candidature as a regular routine.
- ✓ When student is grappling with sense of confusion
- ✓ When student is feeling overwhelmed

What would it take to make this work?

Honest and constructive critique from the supervisors without undermining student

What resources might help?

Resources about how to give good feedback: here's my favourite– it's simple, easy to remember, and very effective, so long as you stick to this order:

- One specific positive e.g., I particularly liked your diagram on p3 because it showed how you are integrating ideas
- One specific negative e.g., The way you have positioned the two fields in opposition leaves no room for nuance
- One general positive e.g., overall, your writing is clear and cogent
- And a change question e.g. what will you do differently next time?

SECTION 1: POSITIONING YOURSELF

SYSTEMIC INQUIRY INTO A TRANSDISCIPLINARY PHD

What's the big idea?

Set up an initial inquiry by asking the student to address

- What is a PhD? What is my PhD?
- Why is it a transdisciplinary (or other kind of) PhD?

Write a report within a few weeks. Could involve talking to other students, reading previous theses etc.

Why is this such a good idea?

- Helps clarify a student's expectations
- Helps the student think and present how they see what their contribution would be.
- Helps the student realise the complexity of doing a transdisciplinary PhD.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work
Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes

Effective communication for diverse audiences

- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Early is great.
- ✓ Also could be done at any stage and could be done more than once

What would it take to make this work?

- Student doing the writing needs to value this as an exercise
- Enough time available in the early stage to spend on something like this.

What resources might help?

Systems thinking resources – here's some suggestions

Ison, R.L. 2008. Systems thinking and practice for action research. In Reason, P., & Bradbury, H. (Eds.). *The Sage Handbook of Action Research Participative Inquiry and Practice* (2nd edn). London, Sage Publications, pp. 139-158.

Ison, R.L., Schindwein, S. 2006. History repeats itself: current traps in complexity practice from a systems perspective. Katoomba, Proc. 12th Australia New Zealand Systems Society (ANZSYS) Conference, "Sustaining our Social and Natural Capital", 3rd – 6th December 2006.

SUPERVISOR AS DEVIL'S ADVOCATE

What's the big idea?

For the supervisor to model the role of being critically reflective by playing the role of devil's advocate. For the supervisor to inhabit the space of other alternative or missing perspectives.

The supervisor asks difficult questions or questions that can be seen as ignorant or from a different perspective/ field.

For example, a student has found a new theory and fallen in love with it. It may involve the supervisor finding more about this theory and its critique, and sharing with the student.

It could also simply involve asking questions that come from a different perspective and that carry different assumptions to those of the student.

Why is this such a good idea?

It is about asking difficult questions and giving hints as to what the examination process will be like. Helps develop critical reflection and student's understanding of their contribution.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

All through, but likely to be more important at doctoral assessment and then middle and later stages

What would it take to make this work?

Trust between supervisor and student

Care for not undermining the student.

What resources might help?

Time – extra time investment

STUDENT DEVIL'S ADVOCATE ROLE PLAY

What's the big idea?

Student adopts the persona (intellectually/ emotionally/ epistemologically) of different academic/ disciplinary perspectives who are likely to read/ review their work.

- Might require student to do research on the role/ position of the reviewer.
- Should first be explicitly modelled by supervisor.

Why is this such a good idea?

Trying to inhabit the alternative perspective from which to develop a critique will strengthen student's capacity to argue respectfully, coherently, and legitimately

Which criteria does this address?

- Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
- Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes
- Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ In the middle of candidature – at the stage of making sense of some element of the work
- ✓ When the student is a 'fledgling' preparing for flight 😊

What would it take to make this work?

Humility and a willingness to engage respectfully with other epistemologies and ontologies

Might be good to do in small groups

What resources might help?

Writings that help to disaggregate types of knowledge and worldviews i.e. writings that give students and supervisors useful scaffolds to grasp other perspectives.

WHERE DID I COME FROM?

What's the big idea?

Engage deeply in exploring the relationship between your disciplinary history and your TD approach. Consider the discipline you have come from and

- Explain your TD research from the perspective of your original discipline.
- Consider how your disciplinary knowledge and/or practice might benefit your approach to TD research.
- Explore how they (your original discipline and a TD approach) are interrelated

And at a later stage, perhaps communicate your TD research in a single disciplinary space (eg. disciplinary conference or journal)

Why is this such a good idea?

It encourages the student to think about how their disciplinary background might enhance the TD research they are planning.

This idea requires the student to communicate effectively to an audience that may not be familiar to TD approaches. It enables the student to use the knowledge s/he already has in his/her disciplinary training and to consider how TD research could expand that single disciplinary perspective.

It helps a student appreciate their own history and background and to consider capitalising on it even where a TD approach is radically different.

Which criteria does this address?

- ✓ Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ On approach to candidature assessment
- ✓ When student is defining/refining their research approach

What would it take to make this work?

Openness to examine the influence of your past disciplinary training on your own worldviews and values (and hence those of your audience)

LOST IN TRANSLATION 1

What's the big idea?

Take a passage of the student's writing, or another student's use and process from a different discipline or methodology (via interview) and translate (re-write) this in terms of:

- An opposing perspective / position/ paradigm
- A different research methodology to answer the same question
- A different audience (lay person; dean; expert)
- Into a different voice (experimenting with authorial voices)

Why is this such a good idea?

Gives student appreciation of different perspectives and how this influences the way you approach research and communicate it.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

Early – mid following some reading/ planning/ writing

What would it take to make this work?

Well developed language and communication skills

Flexible supervision (openness to different authorial voices)

Awareness of both the supervision and student that difference is productive, research is dialectical and consensus is not always possible or desirable

What resources might help?

Barbara Kamler and Pat Thomson (2006) 'Helping Doctoral Students Write: Pedagogies for Doctoral Supervision' Routledge

EXPLORE DISCIPLINARY RESEARCH CULTURES

What's the big idea?

Expand a student's methodological tool kit whilst deepening their awareness of and insights into the multiple contexts of their research.

Train/educate student in an investigative technique (e.g., interview/ system inquiry mapping/ experiential design). Student then uses the technique to conduct an inquiry into the discipline culture/s in which their research is situated. Use this as the basis for ongoing supervisory dialogues to develop reflexive awareness of student and supervisor.

Why is this such a good idea?

Builds research skills and experience at the same time as content awareness and reflexivity

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to do (roughly, early days)

What would it take to make this work?

- Knowledge of appropriate (student + Supervisor) strategy to use to inquire into culture.
- Better with large cohort of students/ staff.

What resources might help?

Literature on systems/ disciplines/ tribes/ cultures/ epistemologies – this is a broad idea so specific resources are difficult to nominate – check resources elsewhere in this guide for ideas that concern interviewing and systemic inquiry.

BECOME FAMILIAR WITH SYSTEM(AT)IC TOOLS

What's the big idea?

This is a broad idea that encompasses different approaches to introduce the student to using systems tools and approaches for systematic reflexivity e.g.

- Construct an argument map on a piece of literature. Identify the key points, and trace how they are used in building the argument.
- Construct an argument map on a set of relevant journal articles from different disciplines. How are key disciplinary ideas related or integrated in the overall argument? What are the assumptions and worldviews implicit in those ideas?
- Interview PhD students in other disciplines, about their research. Analyse and describe it from own perspective.
- Pair up with students from another discipline. Discuss thesis research and ask 'how would my thesis look from their discipline?'

Why is this such a good idea?

- Exposes student to different worldviews and ways to engage with this difference in a structured reflexive way: e.g. what is your response? Their response? How might you synthesise these responses? How might your response/s shift?

Which criteria does this address?

- ✓ Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Throughout candidature, varied and repeated as suits context

What would it take to make this work?

Making sense of these tools and outputs require significant skill. Well developed critical friend relationships will help.

Supervisor needs to help develop student capacity. Supervisor may also need to develop their own capacity.

What resources might help?

Throughout this document there are various references to systems tools – browse the related ideas (ones with system in the title).

A good overview and set of resources for argument maps can be found at http://www.austhink.org/critical/pages/argument_mapping.html

SECTION 2 : DEEPENING REFLECTION

KEEP A PERSONAL JOURNAL

What's the big idea?

- Present a blank writing journal as gift to new student. Ask them to design 'logo' within 3 months, that symbolises their research / themselves / their journey / their ambition. Use this as cover of journal + supervisor files.
- Invite journal entries (weekly) for first three months in any form where they design their weekly research experiences, photos/ drawings/ poems/ quotes/ play/ dialogue/ comic/ circuit/ plans/blog.
- Can be incorporated into thesis as personal reflection.

Why is this such a good idea?

- Finding a personal voice & drawing it out
- Creates a habit of personal reflection
- Logo helps distil the essence of thesis
- Uses different part of brain
- Can be included in final thesis as chapter/ cover pages / illustrations/ end chapter reflections etc. The "personal" can give coherence to the other writing.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Ongoing from day 1
- ✓ Particularly important in field work, especially in the extraction process at the end of field work
- ✓ In concluding stages

What would it take to make this work?

- A commitment to make reflecting a frequent habit
- Questions from the supervisor about the journal and how it's going
- A student who is not addicted to drawing.
- A student who fails to use this as avoidance of other writing research work.
- A supervisor who sees connection between 'personal' and 'research'

What resources might help?

Resources on the value of journaling, such as Hiemstra, R. (2001). Uses and benefits of journal writing. In L. M. English & M. A. Gillen, (Eds.), Promoting journal writing in adult education (New Directions for Adult and Continuing Education, No. 90, pp. 19-26). San Francisco: Jossey-Bass.

Resources on alternative/ visual representation of knowledge/ ideas, such as Robert Horn's work. See <http://www.stanford.edu/~rhorn/index.html>

FIND YOUR HEROES

What's the big idea?

- Make a list of the people that inspire you in your research/ work (can be drawn from academic &/or popular literature)
- Reflect on who they are; what they represent; why you like their ideas/ writing
- Reflect over time – do they change; fall out of favour; how does your perception of what you value/ valued about them/ their work change.

Why is this such a good idea?

Develops a frame for deliberate examination of ideas you draw from others; the relationship between their opinions/worldviews and your own; and to challenge these over time.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Applies across all stages of research

What would it take to make this work?

Reflective thinking time & lots of reading

KNOW YOUR STORY

What's the big idea?

Ask the student to free write the simple story of their research - eg

- What's the passion? What's the title?
- What's your story? Who are you?
- What do you bring? What do you want?
- Where are you going?

Ask the student to do this using the word style templates (e.g. Headings, sub-headings) to create a table of contents, which surfaces the internal structure.

Why is this such a good idea?

It engages other parts of the brain, and releases judgement and lets go of details and ifs and buts

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to do early in candidature
- ✓ Making sense of things after a period of data collection
- ✓ Getting over Writing Block
- ✓ Drowning in data/ literature

What would it take to make this work?

- Familiarity with word templates
- Awareness of both supervisor and student of the role of the whole person in the research process

What resources might help?

- Guides from your university's academic unit
- Books on reflection + reflexivity – see other ideas in this section
- Barbara Kamler and Pat Thomson (2006) 'Helping Doctoral Students Write: Pedagogies for Doctoral Supervision' Routledge

REFLECT ON REFLECTIONS

What's the big idea?

Write reflections on research journey as an ongoing practice, and review these at regular intervals. Reflect on shifts in thinking, what triggered the shifts etc. Also think through what reflections could be included in thesis, what could be background.

Candidate keeps journal of reflections on research journey. At intervals of say 6 (or 12) months, candidate looks through journal from the beginning, and reflects on journey.

“Reflective practice is a research process in which the fruits of reflection are used to challenge and reconstruct individual and collective action” (Ghaye and Ghaye 1998)

Candidate to share journal with Supervisor/s (who may read or skim as able within own time constraints), and have a meeting dedicated to reflecting on reflections.

Supervisor/s' role is to ask strategic questions to help candidate through process.

Why is this such a good idea?

Helps develop the practice of critical reflection on own work

Helps discern how to demonstrate critical reflection in thesis.

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

Throughout the candidature

What would it take to make this work?

Practice! Practice will help candidate to develop the skill, and the supervisor/s to develop their ability to guide candidate through, to save ‘trigger questions’ that work, etc.

A supervisor attitude of patience and perseverance, being aware that not everyone is equally comfortable with or adept at reflection.

What resources might help?

A. Ghaye and K. Ghaye (1998) “Teaching and Learning Through Critical Reflective Practice” David Fulton, London.

Strategic Questioning was developed by Fran Peavey in the 1990s – google ‘Strategic Questioning’ and ‘Fran Peavey’ and you’ll find all kinds of resources, like this insightful concise how-to piece from ‘In Context’: <http://www.context.org/ICLIB/IC40/Peavey.htm>.

CREATE THE CRITICAL REFLECTION HABIT

What's the big idea?

- Use external events as triggers to create a habit of critical reflection (e.g. presentations, conference, roundtable, reviewers comments on a paper)
- Use critically reflexive questions as tools. e.g.,
 - How/What do you feel?
 - What stood out?
 - What did you expect? What happened? What was the gap?
- Recognize emotional responses - release those and push through them to learning phase. e.g.
 - What do you know now that you didn't know before?

Why is this such a good idea?

- Allows supervisor to role model critical reflection with questions
- Provides student with a model to guide self reflection.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Throughout candidature, starting from the first trigger event.

What would it take to make this work?

Commitment to make a habit of critical reflection

Supervisor who values emotional aspects

What resources might help?

Resources on critical reflection - what is it and how you do it . e.g., *Teaching and Learning Through Critical Reflective Practice* (1998) by A. Ghaye and K. Ghaye, David Fulton, London.

There's also the classic works of Donald Schön, starting with 'The Reflective Practitioner' way back in 1983. This site is a good overview of reflective practice concepts, and has a useful reference list:
http://www.audiologyonline.com/Articles/article_detail.asp?article_id=2248,

DEVELOP LAYERED REFLEXIVITY

What's the big idea?

- Provide student a supportive environment to develop reflexivity
- Supervisor uses questions to have student recognise how they came to be here e.g. use strategic question process to get student thinking about what they bring to this, such as:
 - What influenced you to choose your goals/research questions?
 - How has your background experience influenced this choice?
 - What are the main values that underpin your goals?
 - What biases are you bringing, that lead you to privilege one view over another?
 - What contradictions and paradoxes do you notice in the way you have articulated your goals/approaches etc?
- Ask students to write own story even right from the start. Draw out values, passions, get down to underlying beliefs and assumptions

Why is this such a good idea?

- Gets the student into the reflexive space right from the start
- Teaches reflectivity at technical, practical and reflective layers

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Throughout candidature

What would it take to make this work?

Student (and supervisor!) willing to be challenged, sit uncomfortably, to tolerate tension, discomfort, complexity

Supervisor needs to model reflexive practice and avoid jumping to rescuer role – goal is offering supportive challenge

There has to be enough trust for challenge to be difficult without destroying

What resources might help?

Fran Peavey's 'Strategic Questioning Manual' is available at http://www.thechangeagency.org/_dbase_upl/strat_questioning_man.pdf

Kath Fisher's 'Demystifying Critical Reflection: Defining criteria for assessment'. Higher Education Research & Development Vol 22, No 3, 2003

Sohail Inayatullah's Causal Layered Analysis: see www.metafutures.org

CRITICAL FRIENDS

What's the big idea?

Critical friends offering supportive challenge in various ways, through writing\recording, as well as conversation e.g.

- Good critical friend partnerships e.g. GAS or similar
- Learning how to ask + receive critical questions [essential for transdisciplinary work]
- Journaling/drawing/blog i.e. recording somehow

Critical questioner could be supervisor, other stakeholders or students

Why is this such a good idea?

- To be fundamentally challenged in one or more of my assumptions.... thought 'x' was normal..... what does that say about 'y'
- Opportunity to question things that hadn't been questioned before

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

Gently at first, then strengthening as student develops confidence

What would it take to make this work?

Need to create space to be with a critical questioner

Students and supervisors need training and practice in, eg, strategic questioning, critical reflection, accountability and support processes

Students need to be able to sit with discomfort – to dig around in and reflect on unexpected reactions – both theirs and others

What resources might help?

Fran Peavey's 'Strategic Questioning Manual' available at http://www.thechangeagency.org/_dbase_upl/strat_questioning_man.pdf

Kath Fisher et al.'s 'What a GAS! Action research as a peer support process for postgraduate students' available at <http://ultibase.rmit.edu.au/Articles/nov03/fisher.pdf>

SECTION 3 : ENGAGING WITH LITERATURE

MAP THE LITERATURE

What's the big idea?

On system pictures that describe your research problematic situation, map your literature review to identify where the focus of the literature lies, what parts of the problem are ignored in the literature, and more specifically, to illustrate the parts of the problematic that particular disciplines are focusing on or paying no attention to.

Key idea:

1. Create a systemic diagram of your research context (could be rich picture or system diagram)
2. Map literature on top of diagram according to the aspect of the research context it is concerned with
3. Categorise perspectives in a way that works for you e.g., with colour or symbols, to differentiate between different knowledge domains
4. Update literature map as research context and literature review evolve over time

Why is this such a good idea?

This exercise can:

- highlight gaps in the literature
- demonstrate and justify the need for a transdisciplinary approach to understanding the situation under focus
- be used together with a meta-epistemological framework to:
 - o identify the focus of perspectives from different knowledge domains

- o guide the researcher to review literature that is important for understanding the problematic situation
- o inform the research design to ensure new insights are generated

Which criteria does this address?

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

When might this be useful?

This activity is useful for making sense of various disciplinary perspectives with respect to a complex research context, so it can be of assistance during

- ✓ the literature review,
- ✓ in research gap identification, and
- ✓ while writing.

What would it take to make this work?

An understanding of the research context to create a system diagram and a review of the literature.

What resources might help?

Systemic diagramming resources are few and far between. Rosalind Armson and her colleagues at the Open University have some wonderful resources that are freely available. See the animated tutorial on diagramming details at <http://systems.open.ac.uk/materials/t552/index.htm> and also the accompanying unit (<http://openlearn.open.ac.uk/course/view.php?id=1290>) on systems diagramming.

DISTILLATION 101

What's the big idea?

The concept is to distil the essence of the claim in each paper you read. It will likely be insightful to revisit these distillations as experience grows, since we know that papers take on different meanings as our ability to distinguish nuance grows and improves.

Why is this such a good idea?

Distilling the key ideas creates good thinking and writing habits from day 1. Revisiting and revising the outputs of the distillation process provides tangible evidence of the growth and development of a student's, or a supervisor's thinking. Being able to be clear about other's contributions also makes it easier to discern one's own contribution.

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- Evidence of critical reflection/reflexivity on own work
- Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes
- Effective communication for diverse audiences
- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Early on, from literature
- ✓ Later on, include own data

What would it take to make this work?

A good process for capturing responses to articles as they are read, which means strong familiarity with and excellent proficiency in using a good referencing program.

What resources might help?

Some students/researchers use text analysis software packages, such as nVIVO™, to help manage textual references and summaries alongside primary data.

META MACRO MICRO REVIEW

What's the big idea?

Using review tools to critique work from different levels.

- Overall coherence (meta level)
- Detailed content (macro level)
- Presentation (micro level)

Why is this such a good idea?

- Allows supervisor to justify how work is reviewed + critiqued.
- Gives comprehensive + rigorous structure.
- Ensures that ways of engaging with the piece is not left out.
- Gives student a tool for self-critique + reflexivity

Which criteria does this address?

- ✓ Critically aware, coherent argument
Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
Alignment between epistemology, theory, methodology, claims, and enquiry space
Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
Original and creative contribution to knowledge and/or practice

When might this be useful?

- when student gives written piece
- when clear line of thought is missing.
- in routine writing - practice using it as self-check
- as a tool for students to share in reviewing each other's work

What would it take to make this work?

Supervisor being familiar with review frameworks

Stepping into a reader's shoes

What resources might help?

Review guides (for journal articles etc)

EXTRACT THE ARGUMENT

What's the big idea?

Students asked to find a 'good' journal article in their discipline and construct an 'argument map' of the article.

What is the structure of key points?

How do these relate to each other to build the argument?

What is the convincing evidence (in this discipline)?

Give student an education article + ask them to do the same (or do it with them if they struggle) then compare/ contrast – follow up is to ask them to use it to 'review' another journal article.

Why is this such a good idea?

Provides the tools for argument development and review at later stages

Developing the skills to be able to discern arguments and their quality is a wonderful way to enhance both critical writing and critical thinking skills, at the same time as surfacing implicit assumptions.

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to do
- ✓ Structuring and writing own journal paper

What would it take to make this work?

Some familiarity with discipline journals

Supervisor skills in argument analysis

What resources might help?

Academic writing guides from your university.

AusThink has generously shared an excellent set of critical thinking resources on the web, including a very rich site on argument mapping”

http://www.austhink.org/critical/pages/argument_mapping.html

SYSTEMIC ARGUMENT MAPS

What's the big idea?

Construct “systemic argument map” from top journals in the selected disciplines on a topic/ theme

(for example, if topic/theme is on environmental water resource allocation, you might select discipline journals from hydrology, agriculture, resource economics, and ecological economics)

- Epistemological positioning (for each journal) to identify embodiment/ surface difference
- Trace ideas to surface what's implicit and explicit using:
 - o Concept mapping /mind mapping
 - o Metaphor mapping
 - o Storyline (synthesis)
- Surface differences between journals/disciplines

Why is this such a good idea?

- Raises awareness of the connections & disconnections between disciplines
- Traces lineage of ideas/ concepts on discipline theory family tree

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

This could be used throughout early and later stages, but not during student crises

What would it take to make this work?

Supervisor has to have the capacity to initially show the way.

What resources might help?

See resources at ‘Metaphor Enquiry’ and ‘Argument Maps’ and other systems ideas.

RESEARCH PATTERN ANALYSIS

What's the big idea?

Get one or several papers reporting research in field of student's topic.

Extract flowchart of main assertions & note quality & quantity of evidence in each paper (compare between papers for this).

Or

Describe in generic terms:

- Pattern of research (e.g. methods – Subjects v Participants; interviews, surveys and textual analysis)
- Focal points of the interpretation (e.g. what else could the authors have interpreted & discussed but didn't)
- Strength and nature of claims authors make based on the research findings.

Why is this such a good idea?

Developing insight into culture of publication (research) in field

Developing strategic approach to research design & publication

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
 - Evidence of critical reflection/reflexivity on own work

- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to do
- ✓ Doing it

What resources might help?

See AusThink's resources on critical thinking, particularly argument maps:

http://www.austhink.org/critical/pages/argument_mapping.html

SURFACE THE METAPHORS

What's the big idea?

- Review a piece of text - Identify metaphors by “as” or “is”, or if an implication exists in text
- What are the dominant metaphors? What do they conceal/ reveal?
- Through what metaphors does the author understand the focal domain (e.g. agriculture, research)?
- What are the implications of the metaphors for eg action, analysis, etc?

Why is this such a good idea?

Humans live in language and metaphors are fundamental. We implicitly background metaphors so the intention here is to explicitly foreground them in order to reflect on their meaning, and the additional meanings they imbue on the subject at hand.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ In analysing and interpreting literature
- ✓ Make the implicit explicit in different discipline discourses to orchestrate a higher level conversation.

What would it take to make this work?

Supervisor needs to have very high level of awareness of language, and student needs to be interested in developing their awareness.

What resources might help?

Klaus Krippendorff (1993) Major metaphors of communication and some constructivist reflections on their use. ‘Cybernetics & Human Knowing’ 2(1):3-25.

Neuro-linguistic programming resources might also be helpful to explore the power of metaphors in communication: check out www.metaphor.org.uk or <http://www.jasonmahoney.com/metaphor/start.htm>.

And you might enjoy Sohail Inayatullah’s (one of Australia’s leading futurists) Causal Layered Analysis to link it all together in a theory of change: <http://www.metafuture.org/Articles/CausalLayeredAnalysis.htm>

TRACE DIFFERENT PEDIGREES

What's the big idea?

- Graphically analyse and represent the place of different disciplines in a document.
- Use highlighters on paper or electronically to identify contribution from different disciplinary literature in your (or other's) piece of writing and analyse where ideas come from. Have a different colour for synthesis

Look at colour balance.. e.g.

Pink = ideas from education literature

Blue = ideas from engineering literature

Green = where student brought ideas together (their synthesis)

- Can also do this on a whole (electronic) document with 3rd level headings and “see” integration on extended table of contents.

Why is this such a good idea?

Can reveal weightings different disciplines are being given.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ In engaging and interpreting literature
- ✓ Making sense of things after data collection and interpretation
- ✓ In writing process for students later in candidature

What would it take to make this work?

Student able to gain some distance on their writing

SECTION 4 : INCREASING EXTERNAL/CRITICAL ENGAGEMENT

LOST IN TRANSLATION 2

What's the big idea?

Student does short interviews with people from different disciplines working on same topic/ situation/ problem. Goal is to explore how they see the topic and their approach (i.e. methodology, data typologies, data collection processes, analysis, and interpretation). Student writes up and then translates from his/her perspective.

Why is this such a good idea?

Helps in developing critical perspective on others & own approaches.

Which criteria does this address and how?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

- ✓ Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Middle of candidature when starting to converge/focus
- ✓ When student is feeling his/her work is irrelevant

What would it take to make this work?

Networking opportunities with others working on same area (attending conference, participating in online forums etc)

Some interviewing / strategic questioning skills on the part of the student – would be good to practice interviewing skills on friends and fellow students.

What resources might help?

Yoland Wadsworth's 1997 best seller 'Do it yourself social research', published by Allen and Unwin, is a great resource, and a very practical introduction to a wide range of social research techniques.

PRESENT TO DIFFERENT DISCIPLINES

What's the big idea?

The idea is for the student to seek out opportunities to give presentations to different disciplinary audiences and seek their feedback.

Establish ID/TD peer or small research groups that act as supportive environments to practice delivery papers for other disciplinary audiences. Student could ask members of this group to role play i.e. to take on the persona of someone from a different background or role, and view the practice presentation through that particular lens. Supervisor supports (intellectually and financially if possible) conference participation in other disciplines. Debrief experiences with supervisor and/or group.

Why is this such a good idea?

Develops capacity for making defensible arguments.

Develop the student's ability to face potentially critical audiences from other disciplines. Prepares student for possibility of facing unsympathetic responses to his/her work as part of research in ID/TD space.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

- ✓ Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Middle of candidature – once some substantial reading/thinking and writing has taken place

What would it take to make this work?

ID/ TD peer groups/ research groups.

Funding for conference attendance – other disciplines

Risk-taking + courageous students

Supervisors who can share their own experiences and strategies of risk-taking

What resources might help?

Creating great presentations will help win over sceptical audiences. There are some simple rules. These are mine: The heading on a slide should be a summary of your point e.g. 'Supervising transdisciplinary research students is personally challenging'. The bulk of the slide is your evidence or data – that which makes the point in the heading. At the bottom of the slide, add a text box in a different colour – this is called 'the kicker' – it's the 'so what' for your audience e.g. 'New supervision training resources are needed.'

CASUAL CONVERSATIONS

What's the big idea?

For the student, where possible, to engage casually with actors/ stakeholders in their issue/ problem/ practice of interest

- Through personal networks, or other sources, arrange to meet for 'coffee', lunch etc. with targeted actors /stakeholders/ people involved in the research issue/ context/ situation
- Write up reflective notes of these discussions afterwards, including implications for the thesis/ research direction.

Supervisor prompts the activity + listens + shares in discussion on reflections

Why is this such a good idea?

The goal here is to keep TD research relevant and engaged with the context.

- Brings the research focus back to being closely aligned to the societal question or issue to which it relates – stimulates questioning and rethinking.
- Provides student with new insights on how to make research relevant (+ communicate research) to their audience.
- Provides student with renewed enthusiasm, excitement about usefulness/ point of their research

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts (here, it's the research context/ situation)

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ When the student is feeling their work is irrelevant
- ✓ Or is getting too immersed in academic/ theoretical stuff
- ✓ Or is needing to test relevance of their focus/ approaches

What would it take to make this work?

Student needs to have confidence to engage, and to value and have ability to reflect on what they hear.

The risk is that it may prompt changes in direction, so needs managing.

What resources might help?

Good networks on the part of the supervisor and/or student

TEST YOUR PERTINANCE

What's the big idea?

Student develops a set of questions around the scope of the research, designed to test the pertinence of their research to the situation they're researching and the change they're engaged in. Questions would be addressed to stakeholders and in some cases wording would vary to suit the audience.

- Write the key question of the research
- List the stakeholders to be approached
- Design the question for each stakeholder
- Discuss the question with each stakeholder

Critical reflection needs to occur between each discussion with a stakeholder.

Why is this such a good idea?

- To test the relevance and coherence of the research question.
- To engage with the perspectives of stakeholders that are relevant with the research.
-

Which criteria does this address?

- ✓ Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ When student is refining research questions and direction

What would it take to make this work?

Access to relevant stakeholders

Student and supervisor/s need to value what they hear

What resources might help?

Action Research methodologies for question design, addressing stakeholders and cycles of critical reflection, all of which can be found in the following:

Action Research and Evaluation Online

<http://www.scu.edu.au/schools/gcm/ar/areol/areolind.html>

WORLD'S HAIRIEST QUESTIONS

What's the big idea?

- Make a list of all the hard/hairy questions you could get, or have received about your research (including your worst nightmare questions) ;
- Next to each question you have written down, spend a little time writing down your ideal answer.
- Keep this growing list of questions and answers on hand for when you are about to do a media interview, or the night before a conference presentation, or meeting, etc.

Why is this such a good idea?

- enables you to respond to any 'hairy' or tricky questions about your research – anywhere, anytime!
- increases your confidence to answer questions by the media, or any questions from critics, peers, industry, etc.
- refines and helps you to better articulate your answers with elegance! (ie. so you don't wake up at 3am the next morning and think 'damn I wish I had answered that question with XYZ!').
-

Which criteria does this address?

- ✓ Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Particularly useful for engaging the media, or peers at conferences (your views/ideas are only as good as you can express them to be 😊)

What would it take to make this work?

Courage and imagination!

Supervisors who can help dream up 'hairy' questions

What resources might help?

Remembering to breath when a hairy question gets asked.

ENGAGE YOUR CRITICS

What's the big idea?

Engaging your biggest/toughest critical audience (that are also important/strategic) by presenting your research to them at 'their' conference.

- a) Choose a relevant conference where you know there will be many critics/skeptics of your work/topic;
- b) Do your best to pitch/design your presentation to that audience;
- c) LISTEN carefully to all the feedback you get (after presentation or while networking); and
- d) Take the feedback home to reflect upon:
 - Is there some truth in the comments? (even if at first you were defensive): Can you take any of these onboard?
 - How can you refine/improve your arguments to better communicate with this type of audience next time?

Why is this such a good idea?

Because it:

- Provides excellent practice presenting your arguments to skeptics
- Enables refinement of how you present/pitch your research to pre-empt all those hard questions that can leave your audience unconvinced
- Minimises losing face or worse – losing credibility – among your critics.

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

You could really do this anytime, but be careful you don't burn bridges too soon by showing very early work/ideas to critics without a lot of thought.

What would it take to make this work?

Ability to accept, digest and reflect upon criticism

What resources might help?

Bullet proof vest. Thick skin. Great presentation (see resources for 'Present to Different Disciplines')

SECTION 5 : CLARIFYING RESEARCH QUESTION/RESEARCH FOCUS

ALIGNMENT GRAPHIC

What's the big idea?

Getting an alignment of epistemologies, theory, and methodology is a difficult conceptual process. It could do with more heads than simply a student and supervisor.

The idea is to create an alignment graphic, that is tested by small group discussion and perhaps a plenary forum.

Student draws a graphic/ rich picture/ chart/ table explicitly delineating the epistomes characterising each discipline and/or stakeholder involved in the study and the theory and methodology involved in recognition of these epistomes.

The supervisor acts as encourager, student as the initiator, peer groups of both as the recipients. Also needs a blog or similar to act as the poster point for developing a basket of examples.

Why is this such a good idea?

For the student, it clarifies and verifies the nature and veracities of alignment thinking.

For the supervisor and the research group etc, it provides a basket of specific examples of alignment choices.

Which criteria does this address?

- ✓ Critically aware, coherent argument
- Critical, pluralistic engagement with appropriate literature and other artefacts

- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
- Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ All stages, because it should change and develop over time
- ✓ a plenary is especially useful for new students to act as observers
- ✓ Doctoral assessment process

What would it take to make this work?

Time well spent, that already exists in supervisor meetings, GAS groups, PG meetings.... it simply needs a “champion” to focus on this topic as a specific requirement..... e.g. for progress reports, doctoral assessments, or (initially) for supervisor discussions.

What resources might help?

To get started, see the resources at ‘Systemic Diagramming’ and also at Robert Horn’s website about Visual Language
<http://www.stanford.edu/~rhorn/index.html>

META - EPISTEMOLOGICAL CHECK IN

What's the big idea?

- Using a particular meta-epistemological framework (e.g. Ken Wilber's Integral Theory) as a tool to review the knowledge domains that a student is engaging with
- The process is to map their work against the integral theory domains to identify missing perspectives and locate their epistemological/theoretical position.
- May also help them to choose a focus area if they have gone too broad.

Why is this such a good idea?

- Helps to identify inconsistencies between epistemology, theory and methodology.
- Helps to identify what perspectives are missing. Response may be to include or to justify why they are missing.
- Helps to identify focus

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
 - Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Certainly in Research Design Phase
- ✓ Trying to converge after a divergent period

What would it take to make this work?

Would be better if someone who is familiar with the meta-framework (supervisor, other academic, student in advanced stages, etc) provides a little guidance for and review of the process

What resources might help?

Wilber writes prolifically, so condensed versions are more accessible. See his website (<http://www.kenwilber.com>), or Ken Wilber (2000) 'A brief history of everything' Shambhala. Boston

CLARIFY RESEARCH QUESTIONS

What's the big idea?

Use a set of triggers of different structures of research question (and looking at sub questions of questions) to clarify direction, boundaries + aims

Use a set of structures to trigger ideas on types of research questions e.g.:

- Causal relationship
- Open inquiry investigation
- Comparison etc.

Why is this such a good idea?

- In TD research the boundaries are hard to define, so coming to do-able research questions is particularly difficult.
- Also, type of research question that resonates for the students can give useful indication to supervisor + student of their epistemological stance.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

Any stage, particularly when there is confusion about the direction or a need to focus/ converge for a while

What would it take to make this work?

Good trigger questions

What resources might help?

This idea is a more general version of 'Under the spotlight', so check that idea for a particular resource.

SYSTEMIC DIAGRAMMING

What's the big idea?

- Use systems diagrams to think about information and ideas: Spray diagramming, Rich Pictures, Influence Map, Systems Maps, Multiple cause mapping
- Intentionally recognise connectivity, engage with emotion, boundary decisions, etc

Why is this such a good idea?

- Enables student to engage in a structured way with the context of complex situations.
- Helps synthesise arguments.

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Best introduced early, for use throughout candidature
- ✓ Grappling with confusion

What would it take to make this work?

Tolerance of discomfort, persistence and practice if drawing doesn't may come naturally. It is certain to open up different insights and pathways, so persistence will be rewarded.

What resources might help?

The Open University in the UK has great resources. There's a 'Diagramming Pack' that can be bought from the OU. There is also an excellent Systems Diagramming unit that anyone can access on Open Learn <http://openlearn.open.ac.uk/course/view.php?id=1290>. This unit explores what diagrams are and how people use them and a wide range of diagram types. Within that unit, there's a wonderful tutorial that covers a subset of diagrams in more detail: <http://systems.open.ac.uk/materials/t552/index.htm>

What's the big idea?

As a student, interrogate your research and put yourself under the spotlight by asking the questions from *Mason, J. 1996. 'Planning and designing qualitative research' ch. 2 in Qualitative Researching. Sage. London. p9-34.* Use the questions to reflect on research. Questions and responses can be used as the basis of reflection within a group or supervisor/student meeting.

Part 1: Essence of Inquiry

Q1: What is the nature of the phenomena, or entities, or social 'reality', which I wish to investigate?

Q2: What might represent knowledge or evidence of the entities or social 'reality' which I wish to investigate?

Q3: What topic, or broad substantive areas is the research concerned with?

Q4: What is the intellectual puzzle? What do I wish to explain? What are my research questions?

Q5: What is the purpose of my research, what am I doing it for?

Part 2: linking research questions, methodology and methods to design

Q1: What data sources and methods of data generation are potentially available or appropriate?

Q2: What can these methods and sources feasibly tell me about? Which phenomena and component or properties of social 'reality' might these data sources and methods potentially help me to address (ontologically)?

Q3: how or on what basis do I think they could do this (epistemologically)?

Q4: Which of my research questions could they help me address?

Q5: What am I trying to achieve in integrating data and method?

Q6: How- according to what logic- do I expect to be able to add the products together, or to integrate them?

Part 3: Ethical concerns

Q1: What is the purpose or are the purposes of the research?

Q2: Which parties bodies practices or whatever, are potentially interested or involved in or affected by this research?

Q3: What are the implications for these parties, bodies, practices, and so on, of framing these particular research questions?

Q4: Whose interests are served by the criteria I am using to decide whether I make ethical decisions?

Q5: How are why were these criteria developed (either formally or informally)?

Q6: Do the different sources offer criteria of equal stringency?

Q7: Are the criteria good enough in relation to the complex interests I have identified?

Part 4: Practicalities

Q1: What is possible given my resources?

Q2: What is the most sensible use of my resources in relation to my research questions?

Why is this such a good idea?

Helps clarify thinking, fosters consistent critical reflection on research and helps cut through confusion

Which criteria does this address?

- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
- ✓ Mastery of the process and/or outcomes

When might this be useful?

- ✓ Working out what to do (roughly early days)
- ✓ Doing it (e.g. collecting 'data')
- ✓ Making sense of things
- ✓ During a dilemma

What would it take to make this work?

A block of quiet time in which you (the student) have the opportunity to think deeply about these questions and allow answers to come to the surface. Some may be quite difficult to answer.

What resources might help?

Mason, J. 1996. 'Planning and designing qualitative research' ch. 2 in Qualitative Researching. Sage. London.

The reference offers more detail on the aspects of research each question is seeking to interrogate. Highly recommended that, at least the first time, this tool is used in concert with the full reference.

MULTI-DIMENSIONAL MIND MAPPING

What's the big idea?

This is a Mind Mapping exercise on multiple dimensions. If it can be laid out on Autocad, it could be manipulated to intersect between layers.

The purpose of the exercise is to lay out, layer upon layer, each dimension of the TD thesis or project to discover the theories, methodology and epistemology in which they sit, and to find the intersection points between them.

Each dimension of the Mind Map poses a question, and each question creates responses that can be added to the map. These responses intersect with epistemologies and naturally usually fall within theories and the common methodologies in which they would best be studied.

Each dimension is plotted on its own separate map arising from a basic question. If it is not possible to plot it on Autocad it could be plotted on multiple layers of tracing paper to allow one layer to sit over the top of another.

Symbols or little artistic drawings can also be added.

The workings of left and right hemispheres of the brain start to emerge during the exercise. A correlation between which side of the maps ideas are added to and where they sit in thought also reveals itself.

Why is this such a good idea?

It frees the mind to think in multiple dimensions

It allows free association of ideas and to see the intersection of ideas, theories etc.

It allows exploration of other ways of knowing, reveals assumptions and plots connections

Which criteria does this address?

Critically aware, coherent argument

- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
 - ✓ Evidence of critical reflection/reflexivity on own work
 - ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
 - ✓ Mastery of the process and/or outcomes
 - ✓ Effective communication for diverse audiences
- Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to do (roughly early days)
- ✓ Doing it (eg collecting 'data')
- ✓ Making sense of things

What would it take to make this work?

Some knowledge of AutoCAD would be helpful, but a basic ability to let the mind free wheel would be also advantageous 😊

What resources might help?

Mindmapping resources – there are many many many available

AutoCAD or tracing paper

Pens, pencils, rubbers, colour markers

SECTION 6 : DISTILLING & COMMUNICATING YOUR CLAIMS

EARLY SEMINAR TO A FRIENDLY AUDIENCE

What's the big idea?

Presenting a seminar to an audience of friendly inter and transdisciplinary researchers and stakeholders from broader backgrounds than student's home institution e.g. other PhD students, academics and industry people. Annual postgraduate student conferences are a good venue. The seminar outlines what the student is planning to do and how.

Why is this such a good idea?

- Allows for friendly advice and encouragement from an audience sympathetic towards the research project and with experience in working in inter and transdisciplinary research
- The student gets an opportunity for public speaking on their PhD topic, including use of technology.
- Helps shape the PhD project, e.g. too big or too narrow feedback
- Opportunity for input on methodology, literature, case studies, data sources.

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Working out what to (around the end of the first 6 months of the candidacy)
- ✓ When the research program is required.

What would it take to make this work?

Requires organisation - thesis, venue, invitations, handouts...

Friendly audience from different disciplines

What resources might help?

Literature on public speaking – see the resources at ‘Presenting to Different Disciplines’.

ARTICULATION OF CLAIMS

What's the big idea?

- Develop habit for student to articulate the claims their research can make
- Guide student to:
 - o Identify gap in literature/ practice
 - o Get student to talk about it
 - o Supervisor to give feedback
- Give student a chance to reflect and write
 - o I claim that..., I suggest tht,
 - o I would argue that this also...

Why is this such a good idea?

- Develops habit of claiming contribution and developing argument
- Connects language with what your intention is – develops voice
- Gives an opportunity for supervisor to validate and support the student
- Helps student realise they can make a claim
- Use of particular language helps liberate the student to make claims

Which criteria does this address?

- ✓ Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

Effective communication for diverse audiences

- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Important to develop early, and essential by end
- ✓ when doing a literature review- ask student to bring self and voice into it - to put self in relationship to the literature

What would it take to make this work?

- Needs to be initiated by supervisor
- Should be flexible and responsive to the student's needs (e.g. timid students supported to increase level of claim, confident student may need toning down!)
- Trigger sentences and reflection on answers

What resources might help?

- A set of language prompts e.g. I claim that...; ... to make the statements ...
- A set of questions the supervisor may use.

ELEVATOR PITCHES

What's the big idea?

Student to explain what their thesis is about in a very short time to diverse audiences (role played with supervisor)

- Lay person at a party - 1 minute
- Senior academic, e.g. VC in lift (not in your field) – 30 seconds
- Colleague in related field at a seminar – 3 or 4 minutes
- Conference encounter with hero - Several minutes, including methodology.

Tape them to replay and critique

Why is this such a good idea?

- forces student to define the crux of their thesis
- enhances oral communication skills and confidence

Which criteria does this address?

- ✓ Coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Useful at most stages – needs to be revisited, of course
- ✓ If student has sense of being overwhelmed – distilling to the crux is a useful precursor to letting go of some elements

What would it take to make this work?

A little bit of chutzpah ...

What resources might help?

A little practice in front of the mirror.

Critical friends.

NEWSPAPER HEADLINE

What's the big idea?

Write a headline for a newspaper on your thesis topic plus a 50 word explanation of the topic as though introducing a short article on the topic (the rest of which may be sub-edited out).

Why is this such a good idea?

- Clarifies the crux of the thesis
- Assists communication clarity especially for lay audiences

Which criteria does this address?

Critically aware, coherent argument

Critical, pluralistic engagement with appropriate literature and other artefacts

Evidence of critical reflection/reflexivity on own work

Alignment between epistemology, theory, methodology, claims, and enquiry space

- ✓ Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences

Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ When student is drowning in data, information
- ✓ When student is no longer sure what their thesis is actually about

What would it take to make this work?

As an exercise it's pretty straightforward. Could be good to consider making it real by actually seeking to get your ideas into the popular press.

What resources might help?

Advice and training from the media section at your university

SECTION 7 : STRUCTURING A COHERENT ARGUMENT

TOPIC SENTENCE RESTRUCTURING

What's the big idea?

The idea is to focus on getting topic sentences right, and in the right order. Topic sentences should be the first sentence of each paragraph i.e. the first sentence should be an overview of the argument in that paragraph, regardless of the length of the paragraph. The task is to

- Extract the topic sentences from a piece of writing and move them around to see how it affects the flow of argument.

Why is this such a good idea?

- Helps student to rapidly play with argument structure without revising entire piece
- Helps student to work on paragraph structure – ensuring first sentence is indeed topic sentence.

Which criteria does this address?

- ✓ Critically aware, coherent argument
Critical, pluralistic engagement with appropriate literature and other artefacts
Evidence of critical reflection/reflexivity on own work
Alignment between epistemology, theory, methodology, claims, and enquiry space
Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ When the key argument is buried
- ✓ When student is confused or unclear about the point/s they are wanting to make

What would it take to make this work?

Could use computer to do this. Could also use paper e.g. large post-it notes or similar make it easy to literally move ideas around relative to each other and see the flow.

What resources might help?

Argument mapping resources might also help – see 'Extract the Argument'

MINDMAP THE ARGUMENT

What's the big idea?

Get into the habit of getting the concepts down first, clarifying relationships, before diving into the detail of writing. The task is to create a skeleton of the structure of the argument using mind mapping or similar approaches.

Why is this such a good idea?

- Focuses the thinking and writing
- Develops a coherent flow of argument
- Helps to order complex non-linear ideas into linear (written) medium.

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
 - Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Routine writing
- ✓ When clear line of thought is missing in writing

What would it take to make this work?

A capacity to iteratively work on the big picture and the details.

What resources might help?

Mindmapping software could help – there are many freely available on web. You can also do mindmaps by hand!

The Open University resources for Systemic diagramming could also help – see the ‘Systemic Diagramming’ idea for details. .

STORY BOARD THE ARGUMENT

What's the big idea?

There's various ways to construct an argument – here the focus is on working backwards, and doing so with illustrations

- Work back from conclusions (roughly) then work through arguments that have to be made to reach that point.

The view when you are looking back from the end of an argument, or a vision of the future, is different from when you are looking forward – this simple but profound idea is known as backcasting.

Why is this such a good idea?

For students to understand the formal process of understanding an argument

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
 - Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this help?

From the beginning and throughout candidature.

What would it take to make this work?

Supervisor skills in argument analysis and an affinity or at least an openness on the part of the student to diagrams and illustrations.

What resources might help?

Storyboarding originated in the cartoon industry – check out the Wikipedia entry. Here's a useful resource to guide you through its application: <http://multimedia.journalism.berkeley.edu/tutorials/starttofinish/storyboarding/>

To find out more about backcasting, see K H Dreborg (1996) *Essence of Backcasting. Futures* Volume 28, Issue 9, November 1996, Pages 813-828

ANALYSIS IN PICTURES

What's the big idea?

- Using techniques other than words on paper and screens (pictures and images) to engage with and communicate research themes
- Decide on a medium and collect visual/tactile items for representing ideas. For example, found objects to assemble in collage to represent themes

Why is this such a good idea?

- It offers an alternative medium other than writing to engage with qualitative research
- Connects with a variety of audiences and their preferences
- Supplements traditional forms of analysis

Which criteria does this address?

- Critically aware, coherent argument
- ✓ Critical, pluralistic engagement with appropriate literature and other artefacts
- ✓ Evidence of critical reflection/reflexivity on own work
- ✓ Alignment between epistemology, theory, methodology, claims, and enquiry space
- Mastery of the process and/or outcomes

- ✓ Effective communication for diverse audiences
- ✓ Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ When making sense of things
- ✓ With students having visual/artistic flair

What would it take to make this work?

Imagination

What resources might help?

The classic in the field of visualising is 'Visual Language: Global Communication for the 21st Century' by Robert. E. Horn, a visiting scholar at Stanford University. It's published by Macrovu Inc. Press, 1999.

See also his website: <http://www.stanford.edu/~rhorn/index.html>

ALTERNATIVE THESIS STRUCTURES

What's the big idea?

- Look at the structure of diverse theses to get ideas on different ways of structuring.
- Come up with three alternative designs for the thesis structure before choosing one to adopt.

Why is this such a good idea?

- Breaks the student out of adherence to orthodox thesis structure.
- Provides examples on how to position the contribution through structure
- Can trigger new ways of thinking about their work

Which criteria does this address?

- ✓ Critically aware, coherent argument
 - Critical, pluralistic engagement with appropriate literature and other artefacts
 - Evidence of critical reflection/reflexivity on own work
 - Alignment between epistemology, theory, methodology, claims, and enquiry space
 - Mastery of the process and/or outcomes
- ✓ Effective communication for diverse audiences
 - Original and creative contribution to knowledge and/or practice

When might this be useful?

- ✓ Thinking about the thesis/exegesis structure repeatedly throughout the candidature brings the whole concept closer, making it more manageable
- ✓ Early in the data analysis and interpretation cycle
- ✓ Definitely when student is planning their write up
- ✓ Perhaps when a student is unclear on their contribution

What would it take to make this work?

Openness on the part of the supervisor to different models of contributions.

What resources might help?

Thesis writing resources from different disciplines and methodologies. For example, Bob Dick's 'You want to do an action research thesis?' <http://www.scu.edu.au/schools/gcm/ar/art/arthesis.html>.