THE UNIVERSITY OF ADELAIDE AUSTRALIA

RSD

AUSTRALIAN LEARNING & TEACHING COUNCIL

1st Australian Summit on the Integration of Research, Teaching and Learning

Bondi, Australia

5-6th Nov 2009

Discipline, Diversity and the Development of All Students' Research Skill

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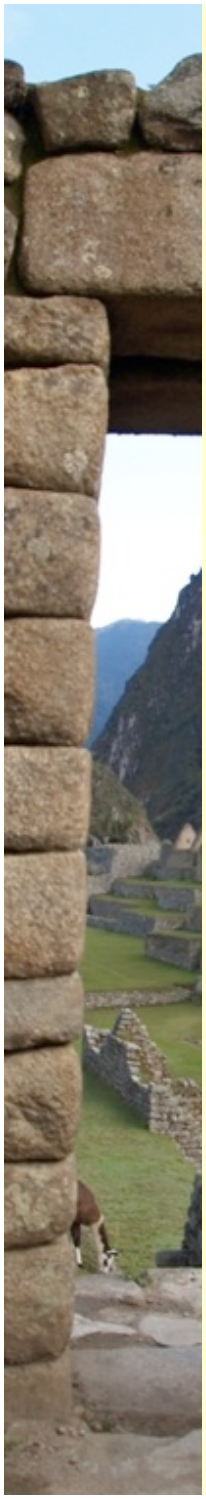
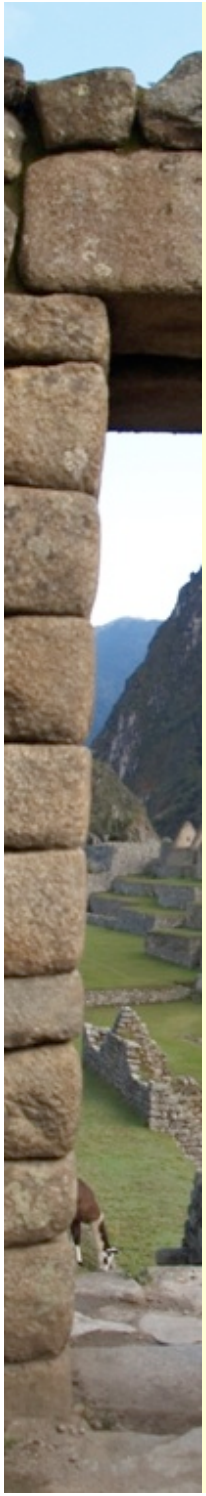


Guided Tutorial Reading Assignment & Essay: MGF 2661 Human Resource Management

- Guided reading assignment and essay topic = RSD Level 1
  - Closed enquiry with a high degree of structure and guidance
- I wanted to help them to:
  - Become “curious” (as opposed to resigned learners)
  - Develop their own knowledge and understanding of the subject (as opposed to remembering “stuff”)
  - Give them skills to do the above

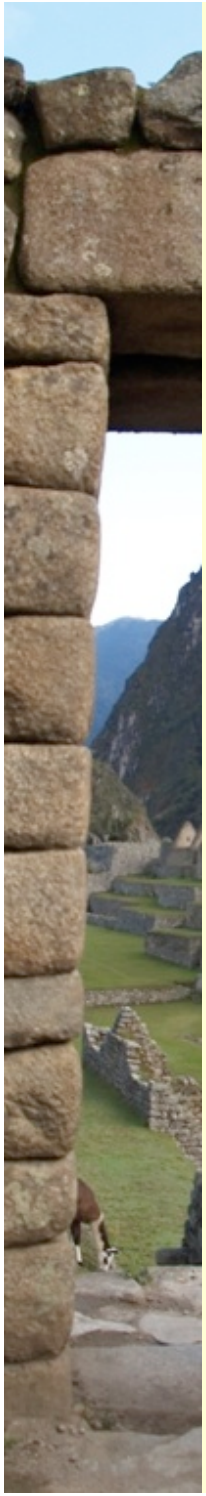


Why develop Students' Research Skill?

"I know that research is important, not only from an educational perspective, but if I'm in a work situation... it's just basically **understanding what I want to achieve** in my role with my customer, ...

... and then understanding what I want to achieve and how I actually go about breaking that down into manageable easy steps. So, yes, it's got **a practical application in my world** in what I do.

-Monash Business Ethics Student Summer 07-08 Cohort, interviewed in April 2009.

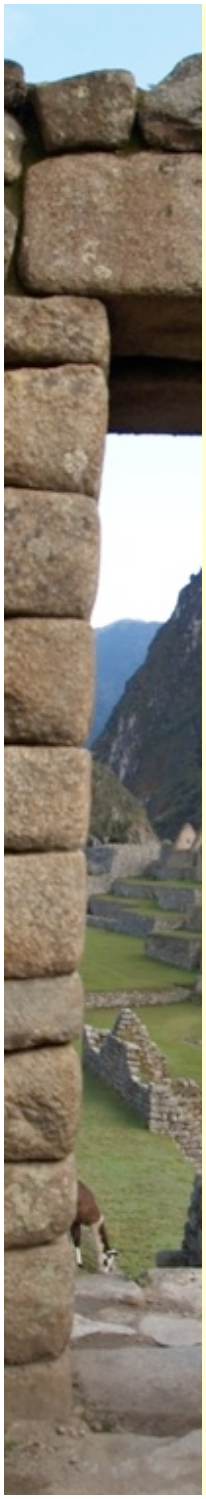


Guided Tutorial Reading Assignment

- Readings assigned each week
- Worksheet designed to assist reader identify key information
- Students asked to compose a question to bring to class
- Weekly readings provide preliminary lit. review for essay assignment due in week 6.

TUTORIAL GUIDED READING ASSIGNMENT WORKSHEET	
The article	***Write*** down the FULL bibliographic details of the article
The abstract What is this article about?	***Read*** the abstract and write in 25 words or less what the article is about.
The introduction How does the article contribute to our knowledge and understanding of a particular topic, concept, area of study?	***Read*** the introduction and write in 50 words or less (you can use points) as per the example above.
The literature review A review of existing research and theory on the topic. It usually leads to a set of research questions or hypotheses.	**Read** the literature review section and write a brief summary 100 words or less) as per the example above.
The methods and data sections Outlines and justifies how the research was done.	***Skim read*** this section and briefly note responses as per example above.
Analysis and results sections	***Skim read*** this section. If you can, briefly note what they authors found and how they made these findings.
Conclusion and discussion This section will tell you what the findings mean and how they add to our knowledge of the topic.	***Read this section carefully***. Briefly summarise as per example above:
Finally	***Develop one question*** about this article to take to your tutorial.

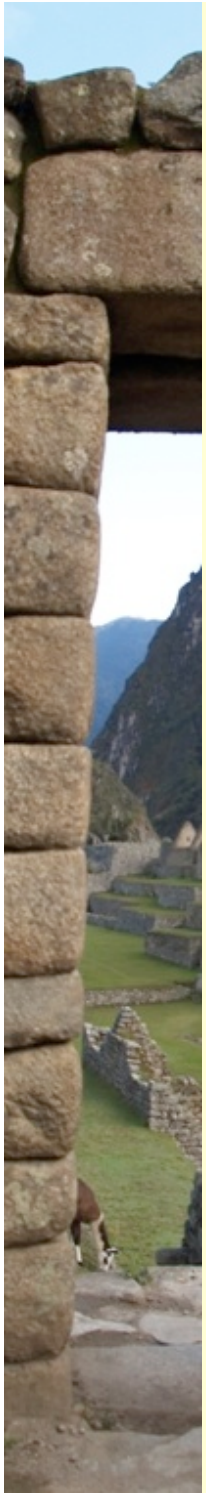
Reference: http://www.brockport.edu/sociology/journal.html accessed 26 February 2009 11.10am



Essay Assignment

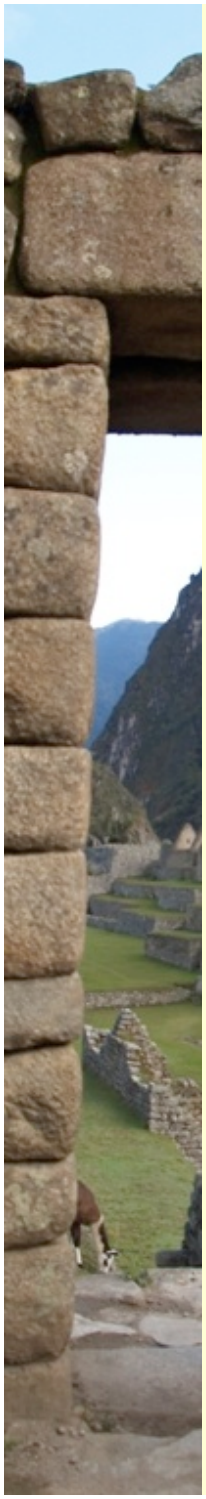
- **Critically evaluate the following statement:**

"Human Resource Management (HRM) has come a long way from personnel management to the contemporary models of human resource management (HRM) discussed in the literature and your textbook. Moreover, it is argued by HRM scholars that HRM can be used as a vital strategic tool for organisations who want to develop and sustain competitive advantage. This is particularly important in the face of the unpredictable external environments faced by organisations brought about by the global economic crisis."



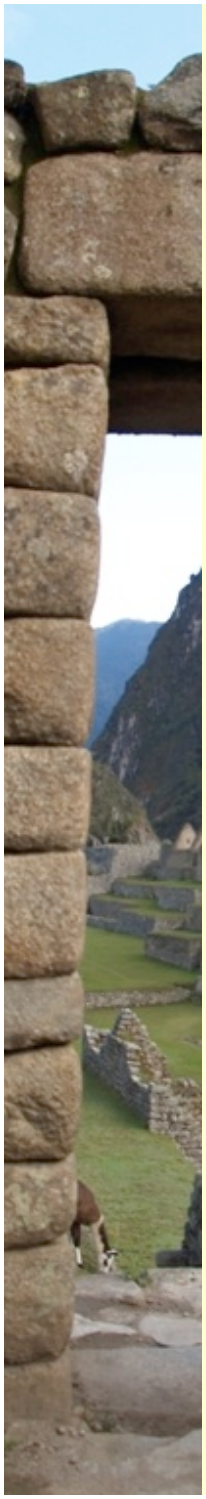
RSD rubric used to mark essay assignment

	MGF 2661 HUMAN RESOURCE MANAGEMENT ESSAY ASSIGNMENT MARKING AND ASSESSMENT GUIDE		
STUDENT NAME ……			
	N = FAIL	**PASS – CREDIT**	**DISTINCTION – HIGH DISTINCTION**
Demonstrated understanding of the essay question and requirements. ✓Discussion and explanation of the evolution of HRM ✓Compare and contrast definitions of HRM and SHRM ✓Identify underlying theory to explain the contribution of HRM to competitive advantage ✓Discuss hard and soft HRM ✓Discuss influence of external environment on HRM	✓ The student has not adequately responded to the basic requirements of the essay question as per Unit Outline and this marking guide.	✓ The student has generally responded to the basic requirements of the essay question although there may be some gaps or confusions in providing key definitions of HRM and SHRM and explaining evolution of HRM ✓ Has generally identified, defined and discussed underlying theory eg RBV and/or strategic management, concepts of integration to explain the contribution of HRM to competitive advantage. ✓ Provides a generally clear and concise discussion of hard and soft HRM ✓ Provides a discussion and description of influence of the external environment on HRM (this may be inferred from the discussion of theoretical models of HRM).	✓ The student has responded clearly and systematically to the basic requirements of the essay question ✓ They have provided a comprehensive explanation of the evolution of HRM and clearly identified similarities and differences in the definitions of HRM and SHRM ✓ They have clearly and systematically identified and discussed underlying theory eg RBV and/or strategic management, concepts of integration to explain the contribution of HRM to competitive advantage. ✓ Provides a generally clear and concise discussion of hard and soft HRM ✓ Explicitly and clearly discusses the influence of the external environment on HRM.



Issues and outcomes

- It takes time and effort to develop the rubrics
- But it does make you think more carefully about learning outcomes and how to achieve them
- Makes marking a breeze
- Students did their reading each week – some level of deeper engagement
- Students (to some degree) used the readings to answer their essay question
- Some evidence of skill transfer to other tasks

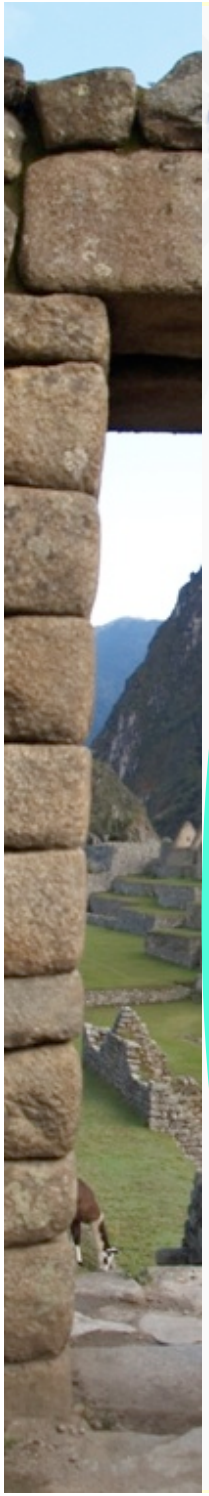


What the students said……

- *"The required reading/literature review task where we summarised and referenced journal articles was extremely helpful in all of the major assignments, group assignment and exam preparation."*

- *"My ability to go through the steps of summarising a research paper has allowed me to understand the context [of HRM] more."*

- *"The format of how to critically analyse a journal article has helped."*



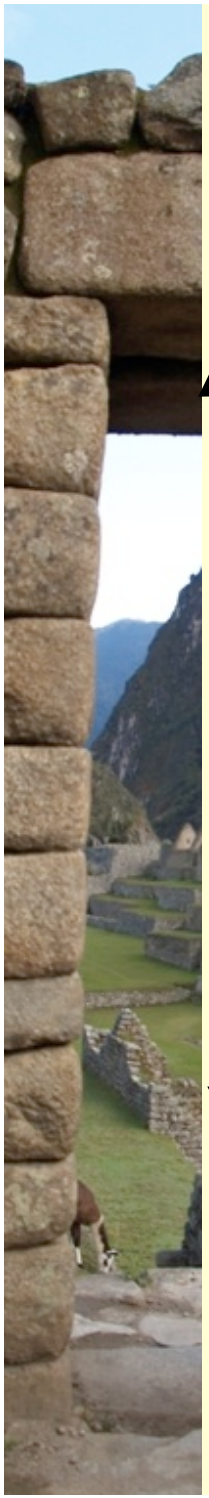
RSD

Research Skill Development Framework

LEVEL OF STUDENT AUTONOMY

FACET OF INQUIRY

	Level I	Level II	Level III	Level IV	Level V
	*Students research at the level of a **closed inquiry*** and require a high degree of **structure/ guidance***	*Students research at the level of a **closed inquiry*** and require **some structure/guidance***	*Students research **independently** at the level of a **closed inquiry****	*Students research at the level of an **open inquiry*** within **structured guidelines***	*Students research at the level of an **open inquiry*** within **self-determined guidelines** in accordance with the discipline*
A. *Students **embark** on inquiry and so **determine a need** for knowledge/ understanding*	Respond to questions/tasks arising explicitly from a closed inquiry.	Respond to questions/tasks required by and implicit in a closed inquiry.	Respond to questions/tasks generated from a closed inquiry.	Generate questions/aims/ hypotheses framed within structured guidelines.	Generate questions/aims/ hypotheses based on experience, expertise and literature.
B. *Students **find/generate** needed information/ data using appropriate methodology*	Collect and record required information/data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.	Collect and record required information/data using a prescribed methodology from prescribed source/s in which the information/data is not clearly evident.	Collect and record required information/data from self-selected sources using one of several prescribed methodologies.	Collect and record self-determined information/data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.
C. *Students **critically evaluate** information/ data and the process to find/generate this information/data*	Evaluate information/data and the inquiry process using simple prescribed criteria.	Evaluate information/data and the inquiry process using prescribed criteria.	Evaluate information/data and the inquiry process using criteria related to the aims of the inquiry.	Evaluate information/data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines.	Evaluate information/data and the inquiry process rigorously using self-generated criteria based on experience, expertise and the literature.
D. *Students **organise** information collected/ generated*	Organise information/data using a simple prescribed structure and process.	Organise information/data using a recommended structure and process.	Organise information/data using recommended structures and self-determined processes.	Organise information/data using structures and processes suggested by provided guidelines.	Organise information/data using self-determined structures and processes.
E. *Students **synthesise** and **analyse** and **apply** new knowledge*	Synthesise and analyse information/data to reproduce existing knowledge in prescribed formats. Ask questions of clarification/ curiosity.	Synthesise and analyse information/data to reorganise existing knowledge in standard formats. Ask relevant, researchable questions.	Synthesise and analyse information/data to construct emergent knowledge. Ask rigorous, researchable questions based on new understandings.	Synthesise, analyse and apply information/data to fill recognised knowledge gaps.	Synthesise, analyse and apply information/data to fill self-identified gaps or extend knowledge.
F. *Students **communicat** knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues*	Use mainly lay language and prescribed genre to demonstrate required knowledge and understanding for lecturer/ teacher as the audience.	Use some discipline-specific language and prescribed genre to demonstrate self-selected knowledge and understanding from a stated perspective and for a specified audience.	Use mostly discipline-specific language and appropriate genre to demonstrate knowledge and understanding within a field from a scholarly perspective and for a specified audience.	Use the language of the discipline and appropriate genre to address knowledge and understanding gaps from several perspectives for a self-selected audience.	Use the language of the discipline, choosing appropriate genre to extend knowledge and understanding, from diverse perspectives for a range of audiences.

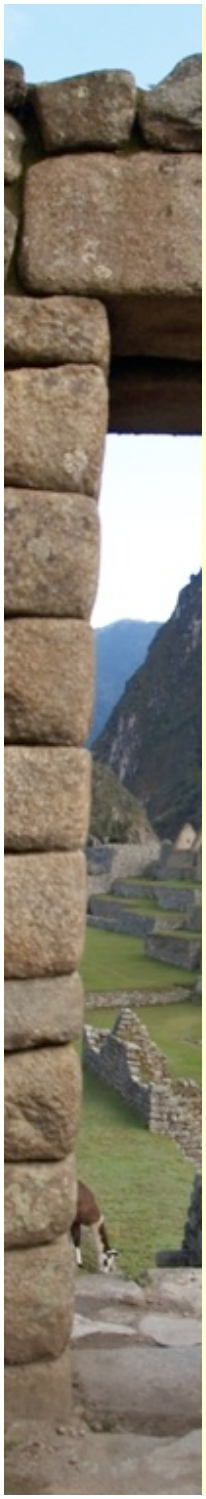


The facets of student research (+ affect)

In researching, students:

1. embark on an inquiry and so determine a need for *knowledge/understanding* — Curious
2. find/generate needed information using appropriate methodology — Determined
3. critically *evaluate* information/data and the process to find/generate — Critical
4. organise information collected/generated and manage research processes — Organised
5. *synthesise* and *analyse* and *apply* new knowledge — Creative
6. communicate knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues. — Persuasive

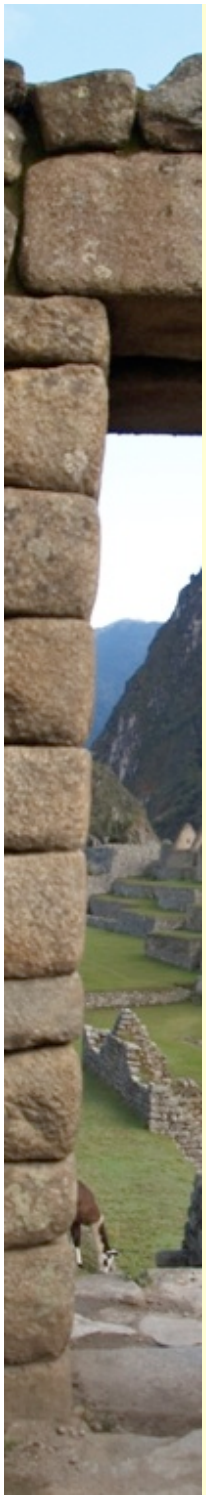
(Willison & O'Regan, 2007)



Levels of Autonomy

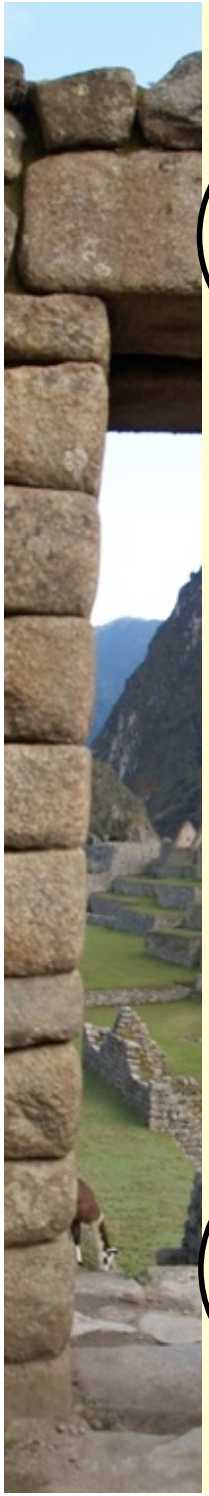
- Research may be closed to open in terms of
  - Beginning
  - How to proceed
  - End points

- Level 1: highly prescribed by lecturer, low student autonomy.
- Level 5: high degree of student autonomy (in line with the discipline)



Disciplines Involved in Trialling RSD

- Business, Human Resource Management, and Tourism (Uni Melbourne and Monash Uni).
- Computing Science, Electronic Engineering
- Dentistry/ Oral Health, Medical Science, Nursing (Uni of Adelaide), Psychology (Macquarie),
- Animal, Vet, Agricultural Science (Uni of Adelaide)
- English, History, Media (Uni of Adelaide).
- Introduction to Tertiary Learning (University of South Australia) Introduction to Academic Learning for International Students, Graduate Certificate in Higher Education (Uni of Adelaide).



Alberta
Queens,
York

RMIT

Uni
S.A.

QUT

Alaska,
St Josephs

Monash
Uni

Uni
Adelaide

Maquarie
Uni

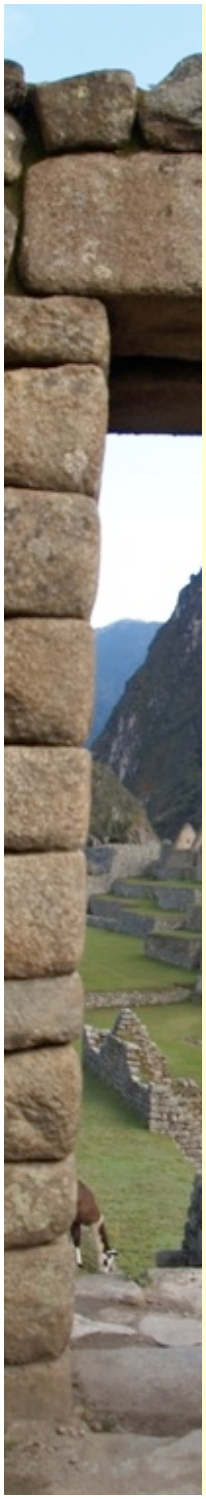
Uni
Melbourne

USQ
(SCU,
VU)

JCU

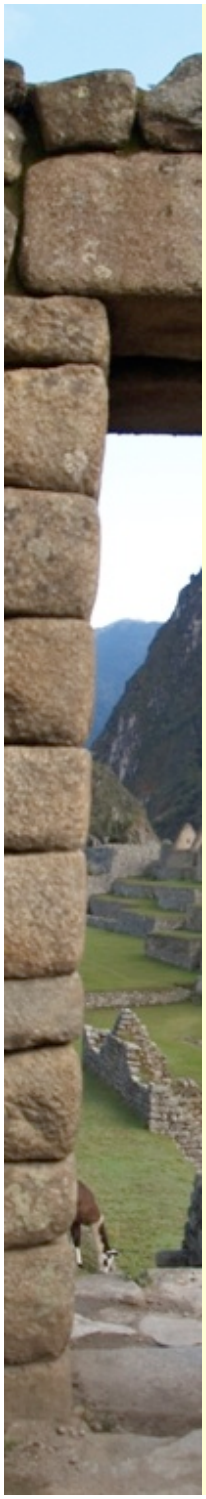
Trinity
College
Dublin

Iran
S Africa
Holland



Professor Lyn Taylor of Dalhousie University, Canada stated:

... the *Framework* opens opportunities to develop research skills to a much broader spectrum of the student population and embraces the full scope of scholarly activity in an academic community. Dalhousie University is actively exploring how the *Framework* may be integrated in its undergraduate programs.



Approaches to Using the RSD

1. Assessment rubric scaffolding
2. Curriculum re-shaping
3. Resource module structuring
4. PhD bridging program
5. Level-by-level scaffolding
6. Analyse existing assessment or curricula
7. Point of departure
8. Inspire new framework for related purpose
9. Policy guidance

- …..

Judi Homewood, Macquarie university Examples from a Capstone Unit (pages 78,79)

Psychology Diagnostic Assessment: Marking Criteria

Student Name: ..... Student Number: ..... Marker: .....

1. Assessment rubric scaffolding

Facet of Inquiry	Student Autonomy Level 1 *Students research at the level of a **closed inquiry*** and require a **high degree of structure/guidance***	Student Autonomy Level 2 *Students research at the level of a **closed inquiry*** and require a **moderate degree of structure/guidance***	Student Autonomy Level 3 *Students research **independently** at the level of a **closed inquiry****
***A. Students embark on inquiry** and so determine a need for knowledge/ understanding*	❑ Hypothesis is not clearly stated and not appropriate to the background given	❑ Hypothesis is one of the following -clearly stated and testable -appropriate to the background given	❑ Hypothesis clearly stated and testable and appropriate to the background given
***B. Students find/generate** needed information/data using appropriate methodology*	❑ Source of data cited	❑ Data gathering method is appropriate to hypothesis	❑ Data gathering method is appropriate to hypothesis
***C. Students critically evaluate** information/data and the process to find/generate*	❑ Limitations or biases that are stated are not relevent	❑ Limitations or biases of the study stated and appropriate	❑ Limitations and biases of the study stated
***D. Students organise** information collected/ generated*	Data recording method lacks useful organisation	Data recording method will organise data	Data recording method/framework will effectively organise data
***E. Students synthesise, analyse and apply** new knowledge*	❑ Data analysis tool/method is suggested but is inappropriate for the task	❑ One data analysis tool/method suggested is appropriate for the task and justified	❑ Data analysis tools/methods suggested are appropriate for the task and well justified
***F. Students communicate** knowledge and understanding and the process used to generate it with an awareness of ethical, social and cultural*	❑ Title is present	❑ Title portrays a general sense of the study content	❑ Title succinctly portrays the full dimensions of the study

Psychology Research Report: Marking Criteria

Student Name: _____ Student Number: _____ Marker: _____

Facet of Inquiry	Student Autonomy Level 1 *Students research at the level of a **closed inquiry** and require a **high degree of structure/guidance***	Student Autonomy Level 2 *Students research at the level of a **closed inquiry** and require **some structure/guidance***	Student Autonomy Level 3 *Students research **independently** at the level of a **closed enquiry***	Student Autonomy Level 4 *Students research at the level of an **open inquiry**, within **structured guidelines***
A. *Students **embark** on inquiry and so **determine a need** for knowledge/ understanding*	❑ Aims not made explicit	❑ Aims not clearly stated or inappropriate	❑ Aims but adheres closely to guidelines	❑ Aims focussed and innovative
B. *Students **find/generate** needed information/data using appropriate methodology*	Single search strategy identifies limited number of relevant sources and/ or limited quality of sources	❑ Single search strategy identifies numerous relevant, quality sources	❑ Search strategy includes several different approaches for finding quality information sources (eg. empirical data, library, data bases, search engines)	❑ Search strategy includes multiple approaches for finding quality information sources (eg. Empirical data, library, data bases, search engines)
C. *Students **critically evaluate** information/data and the process to find/generate it*	❑ Self-evaluation of project (completed the 'Report Checklist')	❑ Limitations or biases of the study are stated	❑ Limitations and biases of the study are stated	❑ Evaluation of the whole study design is rigorous
D. *Students **organise** information collected/ generated*	❑ Data gathered but not presented in a report writing structure Missing _____	❑ Data are incorporated into a report writing structure but there is no clear linkage between sections Poor linkage of _____	❑ Report writing conventions are generally followed with coherent flow Areas for improvement: _____	❑ Report writing conventions are followed completely
E. *Students **synthesise, analyse** and **apply** new knowledge*	❑ Limited synthesis of data with literature ❑ *Results restated with minor analysis*	❑ Data compared or contrasted with literature ❑ Data analysis, but inappropriate on occasions	❑ Data compared and contrasted with literature ❑ Data analysis is appropriate	❑ Synthesis of data with other studies is rigorous ❑ Data analysis is comprehensive
F. *Students **communicate** knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues*	❑ Title is present ❑ Sources are used, but Harvard referencing style is not applied	❑ Title portrays a general sense of the study content ❑ Sources are used and sometimes Harvard referencing style is applied	❑ Title succinctly portrays the full dimensions of the study ❑ A variety of sources is used and Harvard referencing style is usually applied	❑ Title succinctly portrays a study from an "original" perspective ❑ A variety of source types is used and Harvard referencing style is applied consistently

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Research Skill Development

for curriculum design and assessment

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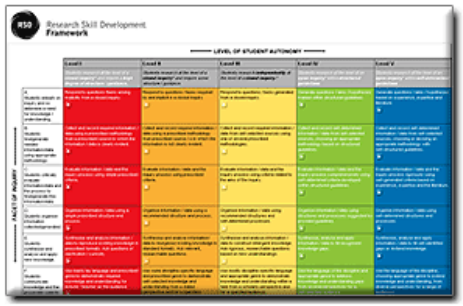
Research Skill Development

View
RSD Framework and Examples

Click to view the RSD Framework.



Welcome to the Research Skill Development (RSD) Homepage. This site provides a growing number of examples, from a variety of disciplines, of assessment tasks that were generated by

News
A place for you to share opinions and resources

- We are currently developing a searchable database of RSD rubrics. A trial version is available here! If you notice any problems or have suggestions for improving the database, please let us know.
- A copy of Peggy Nightingale's interim report on the RSD is available here.
- Eleanor Peirce, Mario Ricci and John Willison are presenting the paper 'Towards student autonomy in literature and field research' at HERDSA 2009 (7-9 July).
- Click here to read the abstract of John Willison's keynote address for the AISHE conference (27-28 August 2009).

Download
RSD Handbook

Research Skill Development and Assessment in the Curriculum

http://www.adelaide.edu.au/clpd/rsd/

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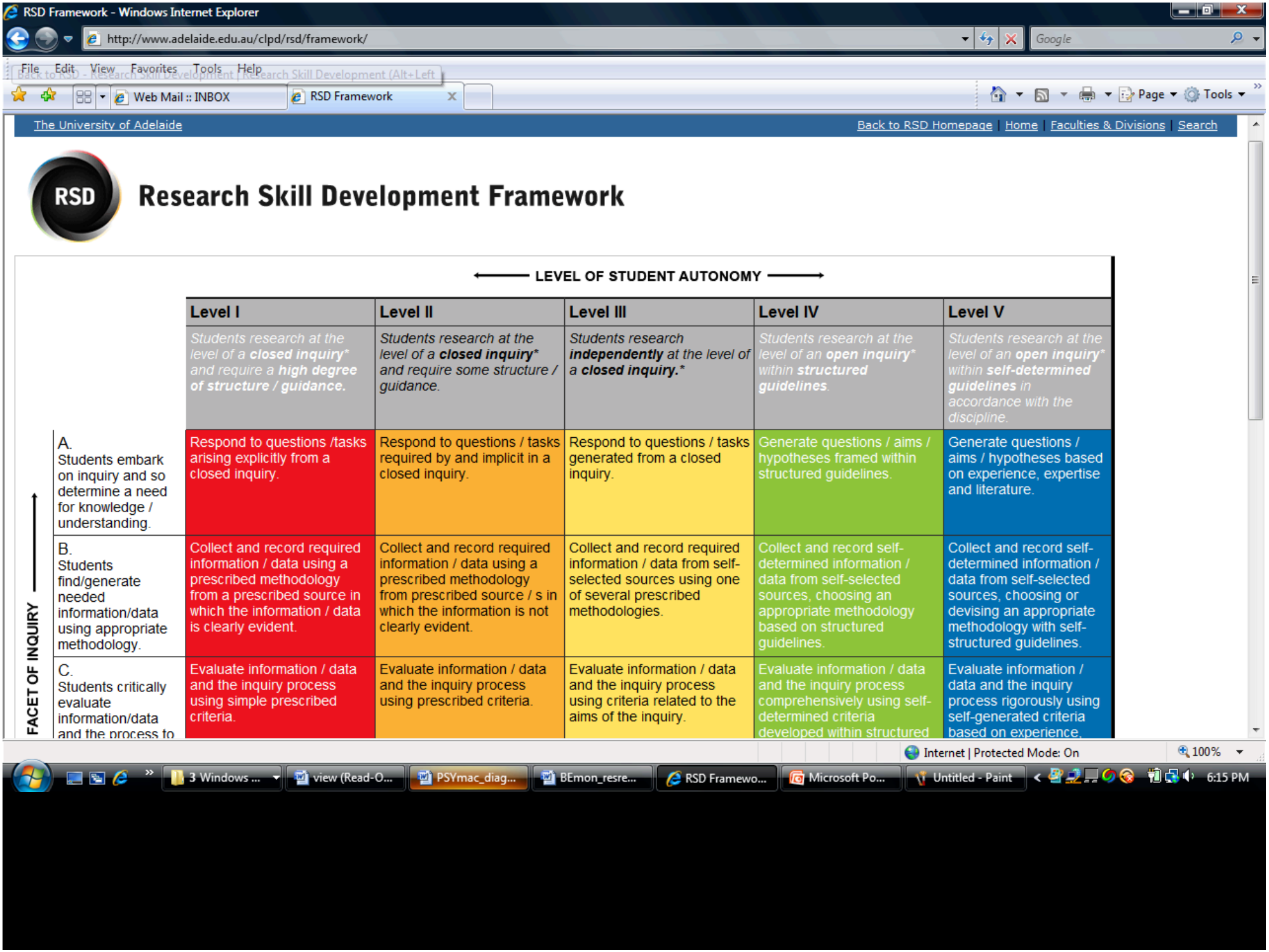
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RSD
Research Skill Development Framework
LEVEL OF STUDENT AUTONOMY
FACET OF INQUIRY
Level I
Level II
Level III
Level IV
Level V
Students research at the level of a closed inquiry* and require a high degree of structure / guidance.
Students research at the level of a closed inquiry* and require some structure / guidance.
Students research independently at the level of a closed inquiry.*
Students research at the level of an open inquiry* within structured guidelines.
Students research at the level of an open inquiry* within self-determined guidelines in accordance with the discipline.
A. Students embark on inquiry and so determine a need for knowledge / understanding.
Respond to questions /tasks arising explicitly from a closed inquiry.
Respond to questions / tasks required by and implicit in a closed inquiry.
Respond to questions / tasks generated from a closed inquiry.
Generate questions / aims / hypotheses framed within structured guidelines.
Generate questions / aims / hypotheses based on experience, expertise and literature.
B. Students find/generate needed information/data using appropriate methodology.
Collect and record required information / data using a prescribed methodology from a prescribed source in which the information / data is clearly evident.
Collect and record required information / data using a prescribed methodology from prescribed source / s in which the information is not clearly evident.
Collect and record required information / data from self-selected sources using one of several prescribed methodologies.
Collect and record self-determined information / data from self-selected sources, choosing an appropriate methodology based on structured guidelines.
Collect and record self-determined information / data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.
C. Students critically evaluate information/data and the process to
Evaluate information / data and the inquiry process using simple prescribed criteria.
Evaluate information / data and the inquiry process using prescribed criteria.
Evaluate information / data and the inquiry process using criteria related to the aims of the inquiry.
Evaluate information / data and the inquiry process comprehensively using self-determined criteria developed within structured
Evaluate information / data and the inquiry process rigorously using self-generated criteria based on experience,
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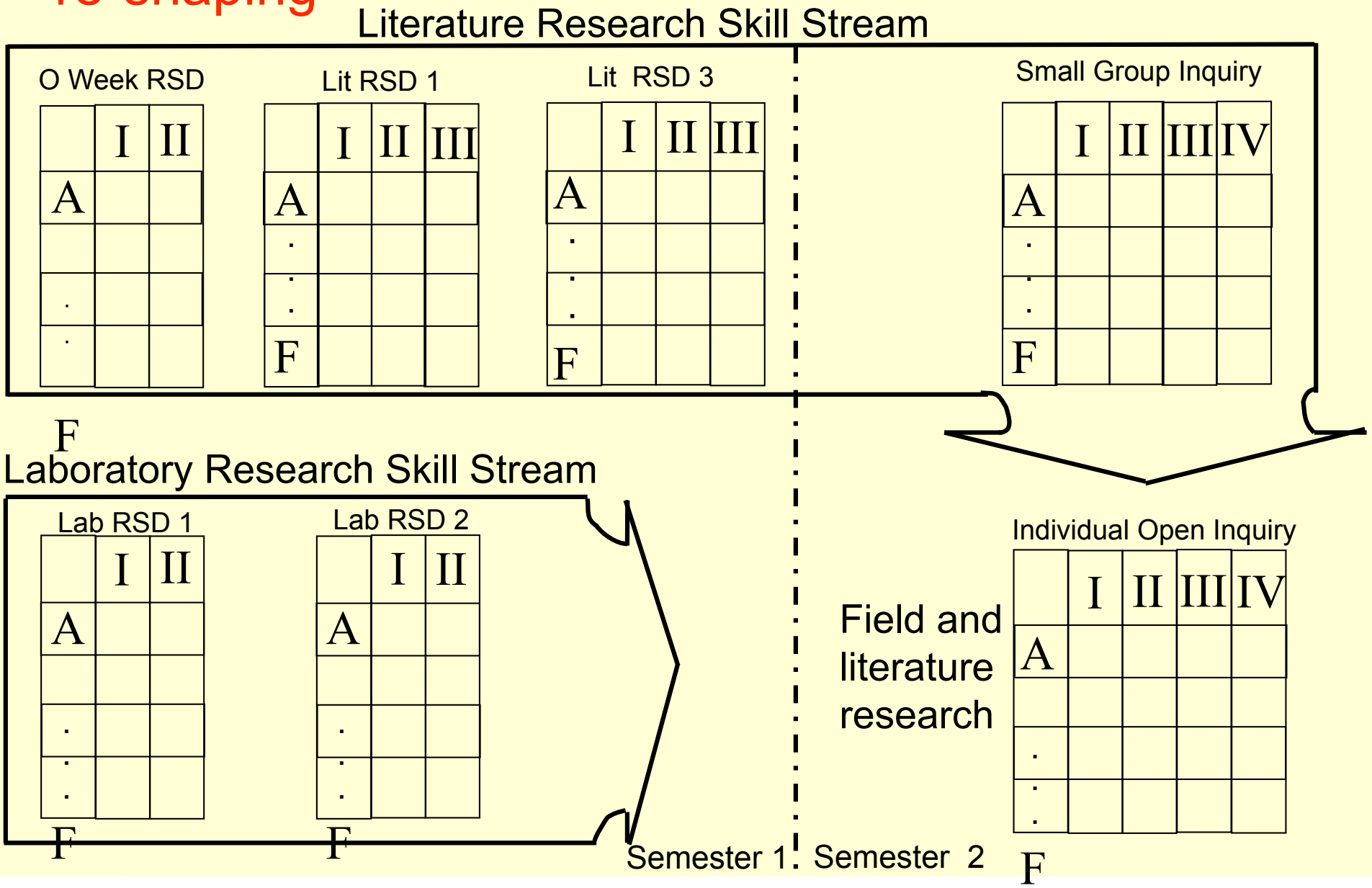
Assessments Based on the RSD framework in First Year Human Biology

(see pages 8-27 of RSD Handbook)

2. Curriculum re-shaping



Developed by Stephanie Bradbury and team for the Faculty of Education, Queensland University of Technology .

3. Resource module

Faculty of Education and QUT Library

List of Integrated Literacy and Study Skills Learning Objects

July 2009

	Year 1	Year 2	Year 3	Year 4
	Intensive academic support	**Increasing student independence**	**Continued increasing student independence**	**Bridging to professional work**
	Students research at the level of a closed inquiry. Students require a high degree of structure and guidance in information skills.*	*Students research at the level of a closed inquiry*. They require some structure and guidance*	*Students research at the level of a closed inquiry*. They research independently and require minimum structure and guidance*	*Students research at the level of an open inquiry* within structured guidelines*
Students ***determine their need*** for information and decide on the nature of information needed	**PILOT: Module 1: Determine your information needs** http://pilot.library.qut.edu.au/module1/ **QUT cite | write: Analysing Essay Questions** http://www.citewrite.qut.edu.au/write/essayquestions.jsp	**QUT cite | write: Analysing Essay Questions** http://www.citewrite.qut.edu.au/write/essayquestions.jsp **Writing Literature Reviews** http://www.citewrite.qut.edu.au/write/litreviews.jsp	**QUT cite | write: Analysing Essay Questions** http://www.citewrite.qut.edu.au/write/essayquestions.jsp **Writing Literature Reviews** http://www.citewrite.qut.edu.au/write/litreviews.jsp	**PILOT: Keep up to date** http://pilot.library.qut.edu.au/module2/2_5/ **Journal Alerting services** http://www.library.qut.edu.au/services/research/alertingservices.jsp
Students ***find, gather and access*** information using appropriate search techniques and sources.	**PILOT: Module 2: Identify and obtain information** http://pilot.library.qut.edu.au/module2/ **Build a Search Strategy (game)** http://pilot.library.qut.edu.au/animations/2/fridge.swf **Finding Books on the shelf (video)** http://blackboard.qut.edu.au/webapps/blackboard/content/contentWrapper.jsp?attachment=true&navItem=content&content_id=_2791052_1&displayName=Finding+books+on+the	**Searching using Subject Headings (video)** http://blackboard.qut.edu.au/webapps/portal/frameset.jsp?tab_tab_group_id=_4_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2FcourseMain%3Fcourse_id%3D_42943_1 **Comprehensive Guide to Database Searching in Education** http://blackboard.qut.edu.au/webapps/portal/frameset.jsp?tab=community&url=%2Fwebapps%2Fblackboard%2Fexecute%2FcourseMain%3Fcourse_id%3D_30701_1	**Searching using Subject Headings (video)** http://blackboard.qut.edu.au/webapps/portal/frameset.jsp?tab_tab_group_id=_4_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2FcourseMain%3Fcourse_id%3D_42943_1 **Library Subject Guides:** http://www.library.qut.edu.au/subjects/education.jsp	**Library Subject Guide: Resources for Practising Teachers** http://www.library.qut.edu.au/subjects/education.jsp **Prac Resources Wiki** http://pracresources.pbworks.com/

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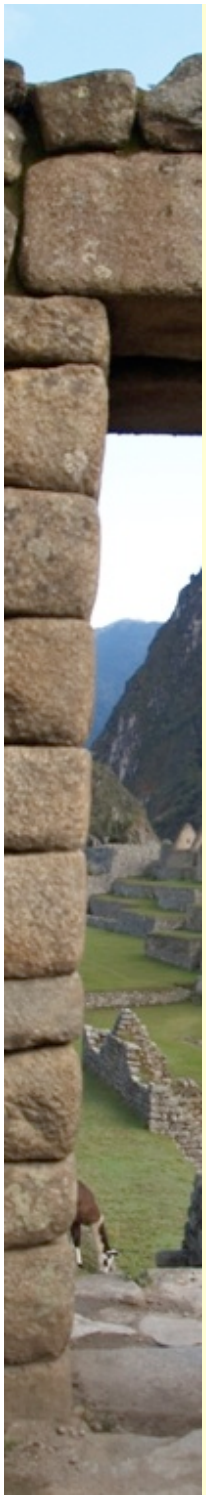
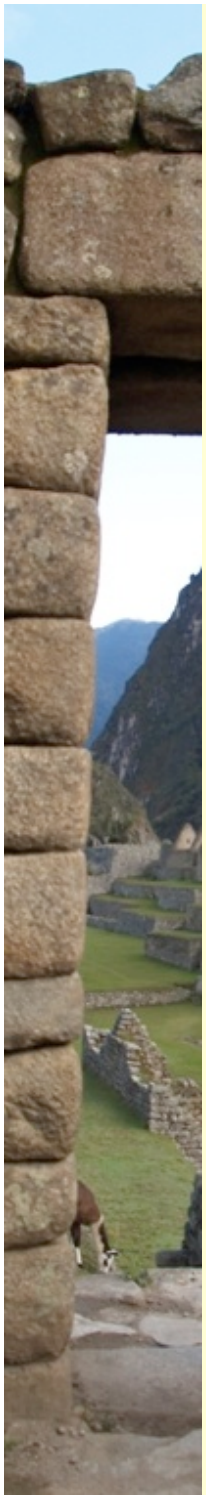
* Inquiry may range from closed (lecturer specified) to open (student specified) (Hackling and Fairbrother, as cited in Willison & O'Regan).



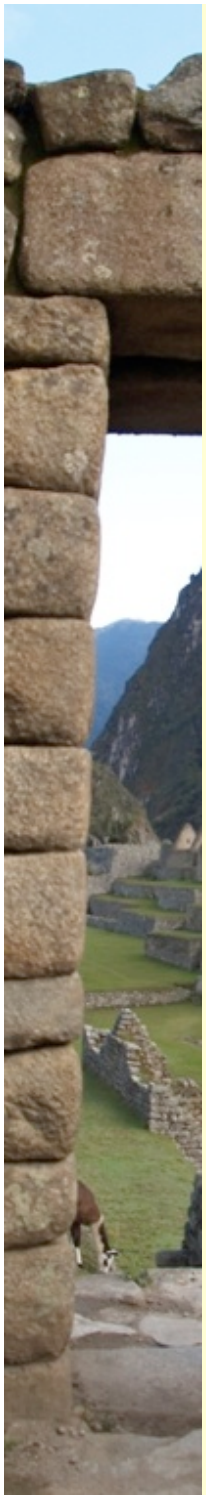
4. PhD bridging Program for International Students

- Students Self-Assess on rubric and supervisors assess with same rubric
- Tool for conversation about expectations of students and supervisors and gaps between these



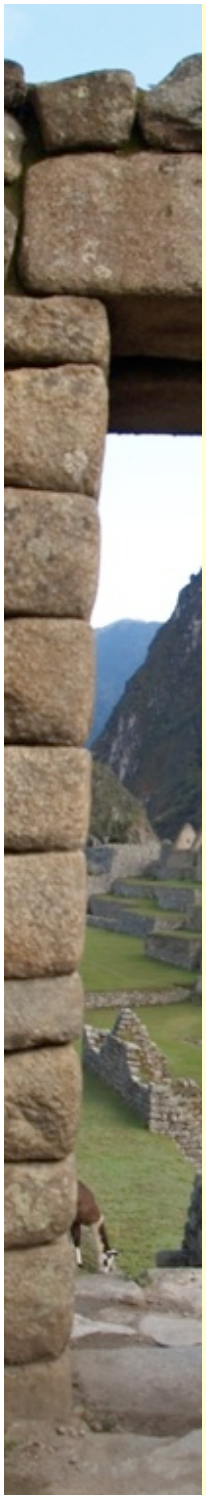
5. Level-by-Level Approach

- Bachelor Nursing, Uni of Adelaide
- Numeracy for patient care focus
- All students to reach certain level, then move towards next level.



6. Analyse existing curricula

- Examples of The RSD analysing existing assessments or courses include
- Analysis of specific assignment task in IT revealed scope of some facets at level 2, some at level 3, some at level 4
- Present use of RSD to analyse entire PBL curriculum in medicine.

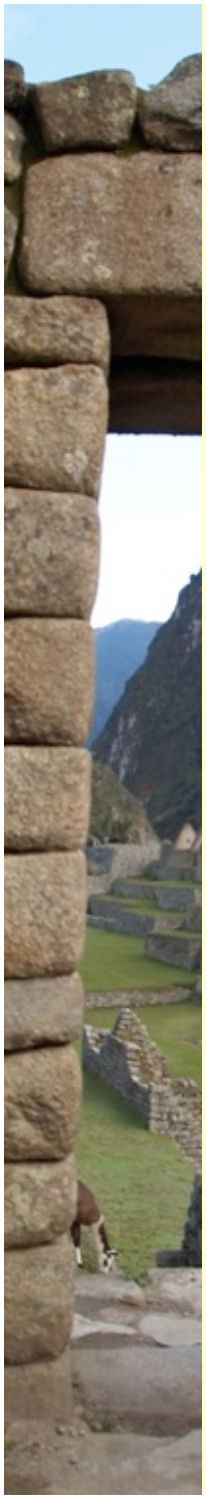


Analyse existing curricula (cont)

... at our academic staff meeting this morning we agreed to review the way we teach research skills from first year to PHD using the RSD...

... with a view to developing a coherent School based approach for nursing and midwifery - again based on RSD.

Trinity College Dublin, School of Nursing and Midwifery



7. Point of Departure

- In the Humanities, BA(Media) has utilised the RSD in a way similar to examples in the handbook, however…

- English adapted the RSD, so there was some of the core elements, but ‘facets’ changed completely to fit the context.

8. Inspire new framework

Work Skill Development framework for WIL

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Work Skill Development Framework

LEVEL OF STUDENT AUTONOMY →

FACET ↓ OF INQUIRY	Level 1 Student requires a high degree of structure & guidance	Level 2 Student works with some degree of structure & guidance	Level 3 Student works independently within provided guidelines	Level 4 Student works in an innovative manner within provided guidelines	Level 5 Student works within self-determined guidelines appropriate to the context
A. INITIATIVE Student establishes role and adapts	Student establishes role requirements, requiring a high degree of guidance to identify and to adapt to position	Student realises correctly role requirements, requiring some guidance to identify and to adapt to position	Student establishes role independently and adapts readily to this context	Student adapts appropriately and through consultation the role, and fulfils original and new requirements	Student determines future goals and projects and works towards these, while fulfilling original requirements
B. TECHNOLOGY Student applies technology to find and generate information / data	Student uses technology with high degree of guidance to find and generate information /data	Student uses technology with some degree of guidance to find generate information /data	Student uses technology independently to find and generate a range of information / data	Student shows a complete understanding in choice of media and technology to generate information /data	Student shows a high degree of sensitivity in the application of media and technology to generate information /data
C. LEARNING Student critically evaluates their role and objectives to establish life long learning skills	Student evaluates information to understand their role, using a simple allocated format	Student evaluates with some degree of guidance, the methodology / technology in use, to generate knowledge	Student critically evaluates the match between theoretical and practical applications to generate knowledge	Student critically evaluates the value of communication processes to generate knowledge	Student critically evaluates knowledge to generate lifelong learning skills
D. SELF MANAGEMENT Student learns to self manage by organising information	Student uses reflective practice to organise information and establish role, using a simple format	Student uses reflective practice to master methods and practices using existing structures	Student uses reflective practice to evaluate and monitor own performance with confidence	Student uses reflective practice to deliver clear projects and goals	Student uses reflective practice to articulates visions, goals and innovative strategies
E. PROBLEM SOLVING Student synthesises and analyses to achieve desired outcomes	Student applies a simple format to synthesise and understand existing knowledge	Student applies a structured format to synthesise and analyse existing data and knowledge	Student works independently to synthesises and analyse a range of resources to generate new knowledge	Student works collaboratively to synthesise, analyse and produce innovative and creative solutions	Student ready to use diverse knowledge to initiate change and extrapolate outcomes
F. INTERPERSONAL COMMUNICATION Student understands self and others through interpersonal communication & teamwork	Student requires highly structured guidelines to communicate knowledge	Student requires some degree of guidance to communicate and understand position in team work	Student demonstrates independence, confidence and assertiveness in communicating knowledge	Student communicates competently showing absolute understanding of workplace culture and professional ethics	Student negotiates and asserts their own values while respecting the contribution of others, in communicating knowledge

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9. Policy Guidance

Universiteit Maastricht Policy Document

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Bijlage 4 Beoordelingsmodel van Willison & O'Regan 2005

	LEVEL OF STUDENT AUTONOMY →				
← LEVEL OF INQUIRY	**Level I**	**Level II**	**Level III**	**Level IV**	**Level V**
	Students research at the level of a closed inquiry" and require a high degree of structure / guidance.	*Students research at the level of a closed inquiry" and require some structure / guidance.*	*Students research independently at the level of a closed inquiry."*	*Students research at the level of an open inquiry" within structured guidelines.*	*Students research at the level of an open inquiry" within self-determined guidelines* .
A. Students embark on inquiry and so determine a need for knowledge / understanding.	Respond to questions /tasks arising explicitly from a closed inquiry.	Respond to questions / tasks required by and implicit in a closed inquiry.	Respond to questions / tasks generated from a closed inquiry.	Generate questions / aims / hypotheses framed within structured guidelines.	Generate questions / aims / hypotheses based on experience, expertise and literature.
B. Students find/generate needed information/data using appropriate methodology.	Collect and record required information / data using a prescribed methodology from a prescribed source in which the information / data is clearly evident.	Collect and record required information / data using a prescribed methodology from prescribed source / s in which the information is not clearly evident.	Collect and record required information / data from self-selected sources using one of several prescribed methodologies.	Collect and record self-determined information / data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information / data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.
C. Students critically evaluate information/data and the process to find/generate this information/data.	Evaluate information / data and the inquiry process using simple prescribed criteria.	Evaluate information / data and the inquiry process using prescribed criteria.	Evaluate information / data and the inquiry process using criteria related to the aims of the inquiry.	Evaluate information / data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines.	Evaluate information / data and the inquiry process rigorously using self-generated criteria based on experience, expertise and the literature.
D. Students organise information	Organise information / data using a simple	Organise information / data using a	Organise information / data using	Organise information / data using structures	Organise information / data using self-

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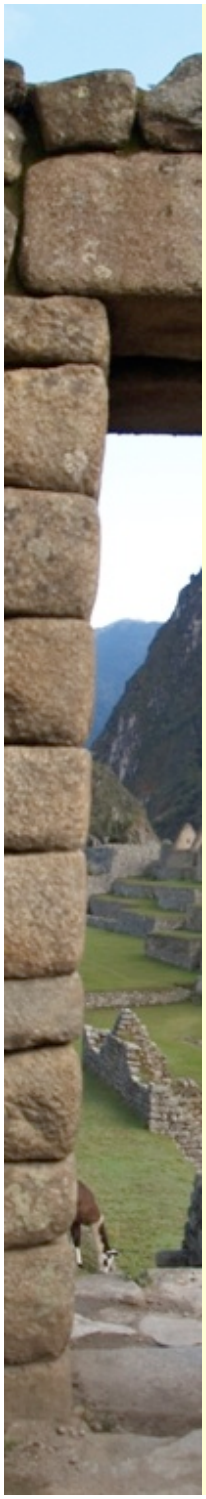
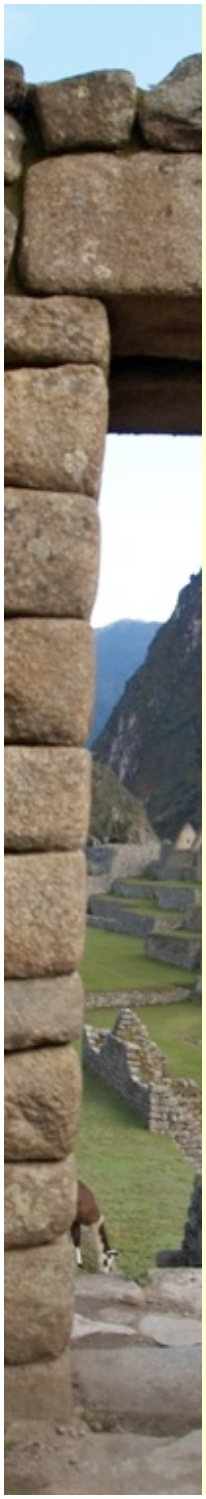


Policy and Practice

or

Practice and Policy

- Policy exists to provide a shared vision
- Problematic in the implementation, partly due to ownership issues, and partly because the local fit can be problematic/ under-resourced/opposed/misunderstood/ …



The RSD may be of use in Higher Education, First-year to PhD

Researcher Skill Development Framework

RSD7

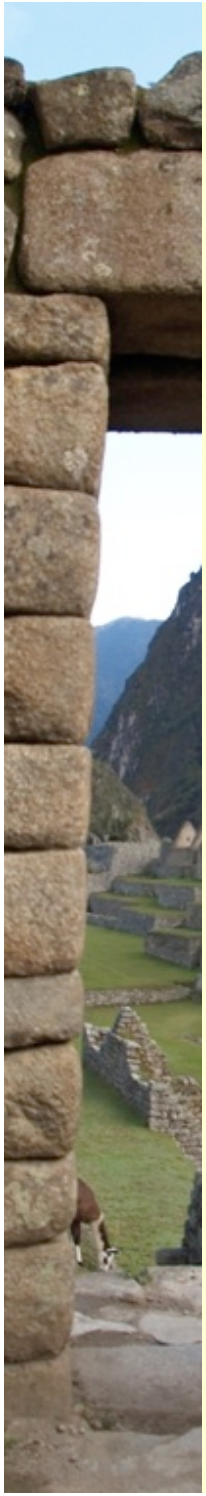
LEVEL OF RESEARCHER AUTONOMY

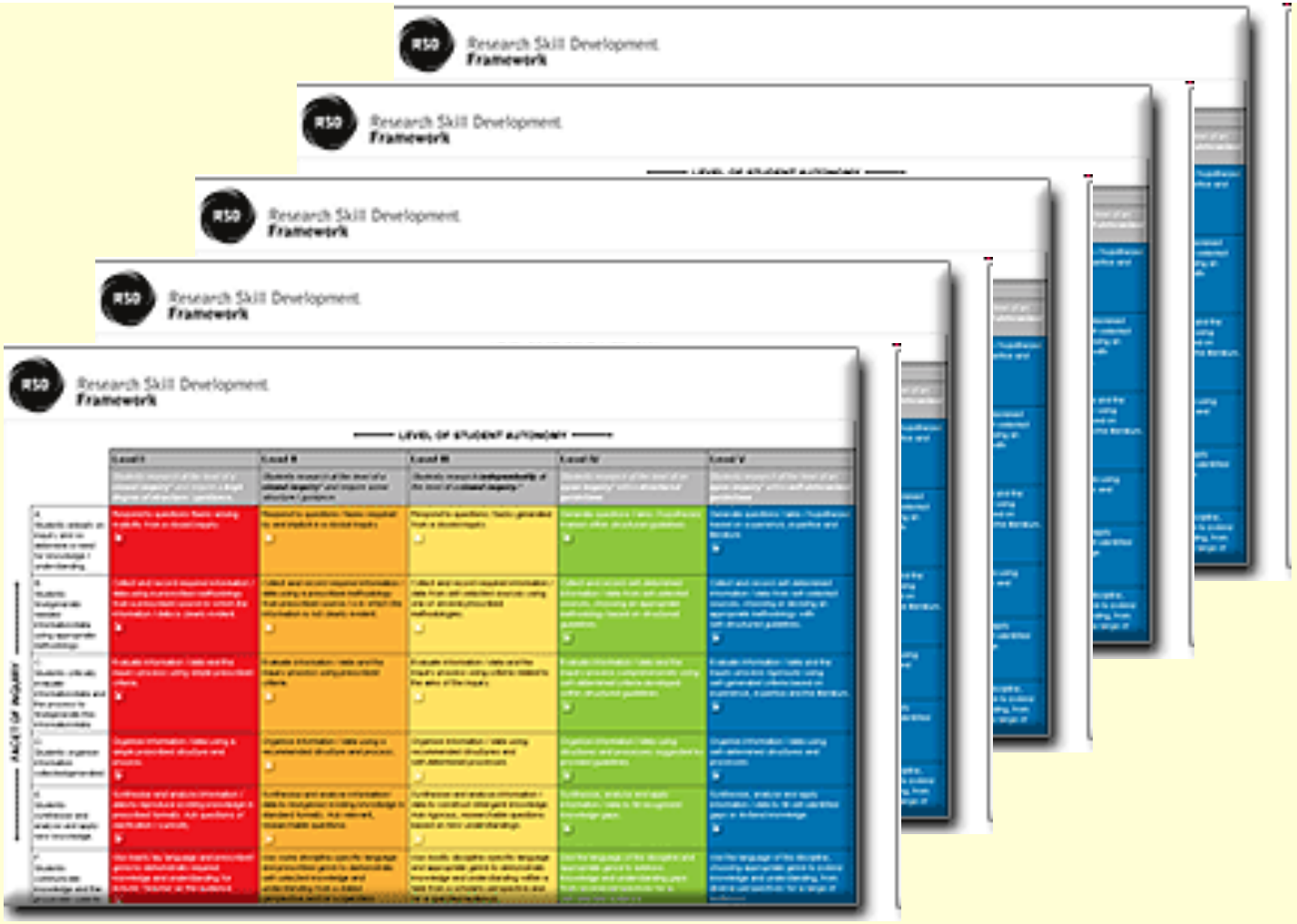
FACET OF RESEARCH

Researchers	Level 1 Research is conducted at the level of a **closed inquiry*** and require a **high degree of structure/guidance**	Level 2 Research is conducted at the level of a **closed inquiry*** and require **some structure/guidance**	Level 3 Research is conducted independently at the level of a **closed inquiry***	Level 4 Research is conducted at the level of an **open inquiry*** within **structured guidelines**	Level 5 Research is conducted at the level of an **open inquiry*** within **self-determined guidelines** in line with the discipline	Level 6 Research **informs others' agendas**	Level 7 Research **enlarges field** of inquiry
A. **Embark** on inquiry and so **determine a need** for knowledge/ understanding	Respond to questions/ tasks arising explicitly from a closed inquiry.	Respond to questions/ tasks required by and implicit in a closed inquiry.	Respond to questions/ tasks generated from a closed inquiry.	Generate questions/aims/ hypotheses framed within structured guidelines.	Generate questions/ aims/hypotheses based on experience, expertise and literature.	Identify previously unstated gaps in literature and articulate research directions in response to them.	Articulate research directions that expand the field.
B. **Find/generate** needed information/ data using appropriate methodology	Collect and record required information/data using a prescribed methodology from a prescribed source in which the information/ data is clearly evident.	Collect and record required information/data using a prescribed methodology from prescribed source/s in which the information/ data is not clearly evident.	Collect and record required information/data from self-selected sources using one of several prescribed methodologies.	Collect and record self-determined information/ data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information/ data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.	Synthesise others' methods to formulate novel methods/ methodologies or apply existing methods to novel application	Generate new methods/ methodologies.
C. **Evaluate** information/data and the process to find/generate this information/data	Evaluate information/ data and the inquiry process using simple prescribed criteria.	Evaluate information/data and the inquiry process using prescribed criteria.	Evaluate information/data and the inquiry process using criteria related to the aims of the inquiry.	Evaluate information/ data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines.	Evaluate information/data and the inquiry process rigorously using self-generated criteria based on experience, expertise and the literature.	Generates substantial research outcomes, so that ideas, practices or interpretations cited/ implemented by others.	Generates substantial research outcomes, so that ideas, practices or interpretations become foundational in field or discipline.
D. **Organise** information collected/ generation process	Organise information/data using a simple prescribed structure and process.	Organise information/data using a recommended structure and process.	Organise information/ data using recommended structures and self-determined processes.	Organise information/ data using structures and processes suggested by provided guide	Organise information/ data using self-determined structures and processes.	Form a research team or a team of community-based practitioners.	Form and develop research networks/ communities.
E. **Synthesise** and **apply** and **analyse** new knowledge	Synthesise and analyse information/ data to reproduce existing knowledge in prescribed formats. Ask questions of clarification/curiosity.	Synthesise and analyse information/ data to reorganise existing knowledge in standard formats. Ask relevant, researchable questions.	Synthesise and analyse information/ data to construct emergent knowledge. Ask rigorous, researchable questions based on new understandings.	Synthesise, analyse and apply information/ data to fill recognised knowledge gaps.	Synthesise, analyse and apply information/data to fill self-identified gaps or extend knowledge.	Synthesise others' concepts or interpretations to frame novel outcomes. May also address substantial concerns of a community.	Develop new concepts or interpretations that expand the field or discipline. May also address substantial concerns across communities.
F. **Communicate** knowledge and the processes used to generate it, with an awareness of ethical, social and cultural issues	Use mainly lay language and prescribed genre to demonstrate required knowledge and understanding for lecturer/ teacher as the audience.	Use some discipline-specific language and prescribed genre to demonstrate self-selected knowledge and understanding from a stated perspective and for a specified audience.	Use mostly discipline-specific language and appropriate genre to demonstrate knowledge and understanding within a field from a scholarly perspective and for a specified audience.	Use the language of the discipline and appropriate genre to address knowledge and understanding gaps from several perspectives for a self-selected audience.	Use the language of the discipline, choosing appropriate genre to extend knowledge and understanding, from diverse perspectives for a range of audiences. New knowledge is publicly accessible.	Contributes to, or changes the direction of, the conversation within the discipline/field through publicly-available communication of knowledge/understanding.	Contributes to, or changes the direction of, the conversation across disciplines/fields through publicly-available communication of knowledge/understanding.

Many cycles may occur between Level I and Level IV or V during the course of formal education. However, when the process of research begins to yield knowledge new to humankind, then the researcher is set to move towards level VI and VII in the discipline.

Concept by John Willison and Kerry O'Regan, produced by Nik Cornish, Centre for Learning and Professional Development. Levels VI and VII are adapted from Bernstein, (2008).
See www.adelaide.edu.au/clpd/rsd for information on the original five level framework. Email: john.willison@adelaide.edu.au -





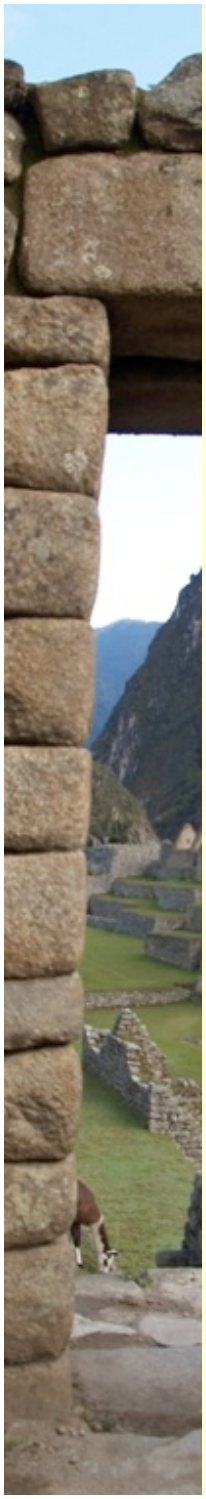
Many Dimensions in addition to Autonomy

Degree of Academic Rigour

Degree of Conceptual Demand

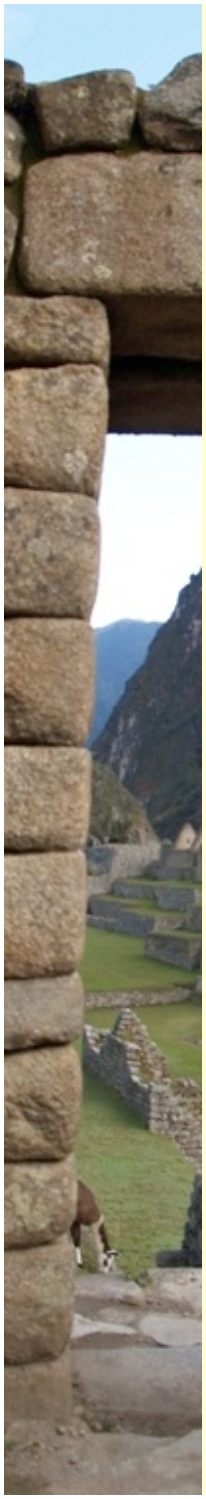
Degree of disciplinary knowledge required

Status of knowledge being pursued



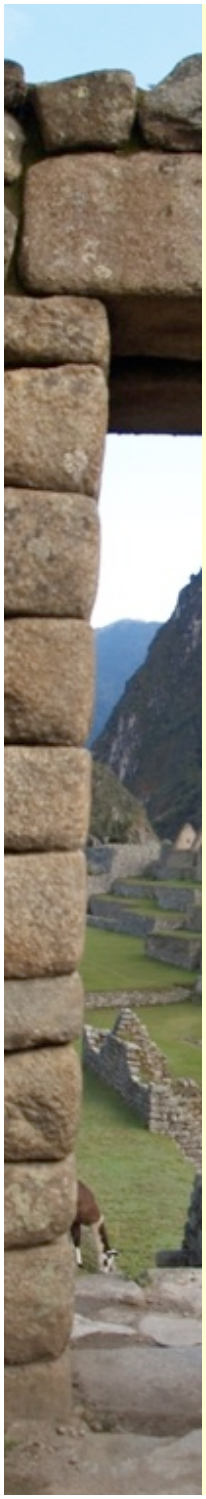
Evaluation of RSD approaches

Some disciplines have been evaluating RSD approaches for 3 or 4 years, and many more are into their second year. Trends are
Students perceive that their research skills improve substantially during a semester when these skills are explicitly developed (Willison, Schapper, & Teo, 2009)
Academics across 8 disciplines have noted substantial improvements in research skills from diagnostic assessments to final assessments (Willison, 2009)



- The development of literature research skills in closed inquiry is correlated with the development of field research skills in open-ended research (Willison, Peirce and Ricci, 2009).

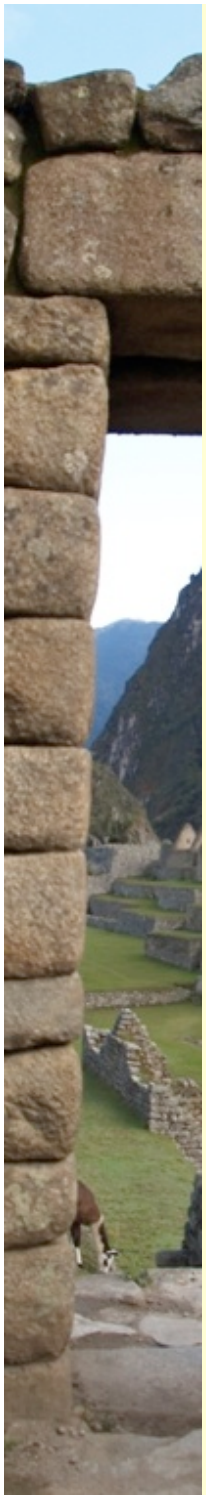
- Students claim that research skills explicitly developed in first year were very useful in subsequent study and, notably, in employment (Peirce and Ricci, Lee & Willison, 2009).



- Use of RSD-based assessment tends to persist, and academics tend to increase their use over time (Willison, 2009)

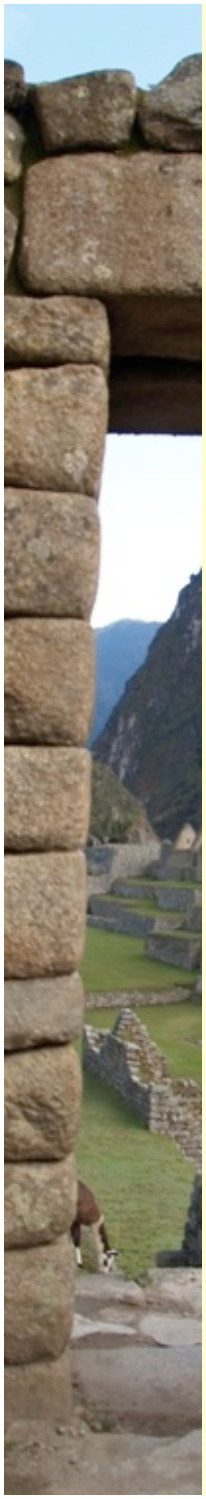
- Ten quite different approaches to utilising RSD have been identified, including the utilisation of online environments

- and an external review of the RSD project found that approaches work best that were most thoroughly adapted to the context of use (Nightingale, 2008).



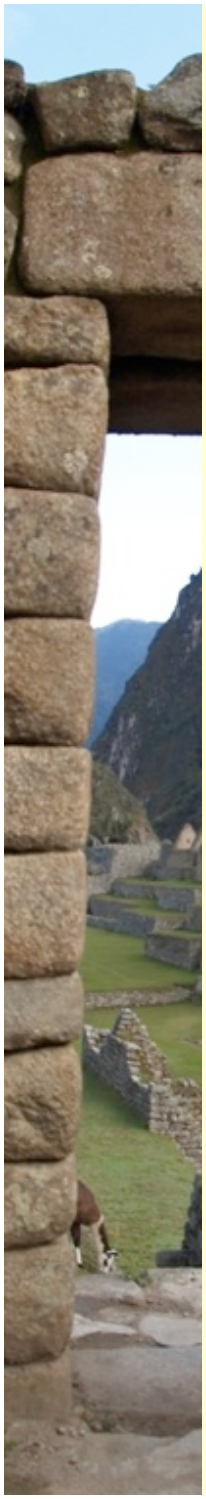
Chief Characteristics of RSD

- Helps make explicit student research skill development
- Suggests incremental steps of development
- Conducive to a coherent approach
- May enable a cyclic approach to development, from low degrees of autonomy to higher, and back again
- Structuring towards student autonomy requires valuing diverse approaches towards Teaching and Learning
- Many good teachers already do most or all of these things



RSD Potential

- Provides a big picture and relates this to the assessment details for course coordinators, lecturers, tutors, and especially students
- Changes the curriculum experienced by students
- Same 'facets' for multiple assessments, various levels
- Explicit &Transparent assessment criteria
- Coherent & Incremental skill development
- Revisited & (potentially) Cyclic Conceptual structure



Reference

Willison, J.W. & O'Regan, K. (2007). Commonly known, commonly not known, totally unknown: A framework for students becoming researchers. *Higher Education Research and Development 26* (4).

Web Site

www.adelaide.edu.au/clpd/rsd

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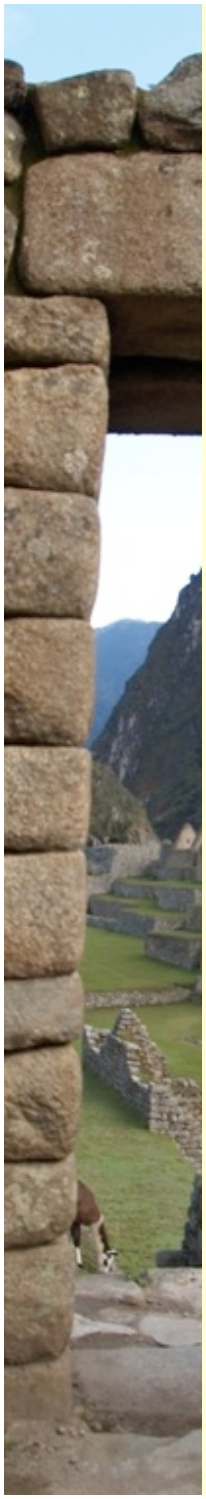
Acknowledgement

Materials used in this session was funded by a Australian Learning and Teaching Council Competitive Grant.

John is around after the conference till Monday 1st Sept and then 5-8 Sept. Feel free to make a time to discuss any issues further .

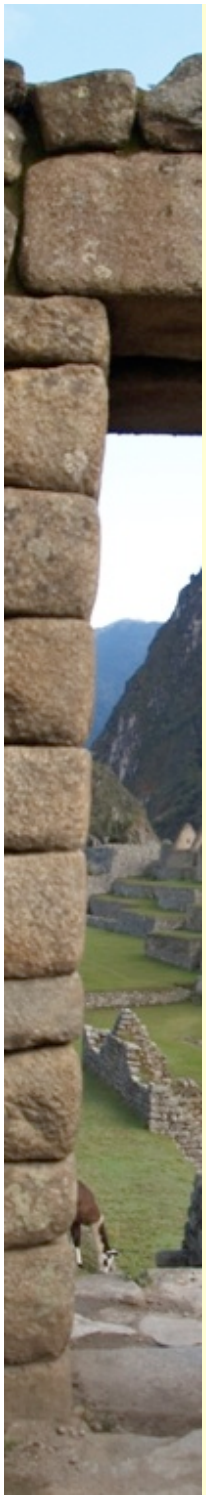


Why develop Students' Research Skill?

- I suppose when you get that skill of being able to research, I think it sort **of inspires something in you that makes you want to find out** things ...

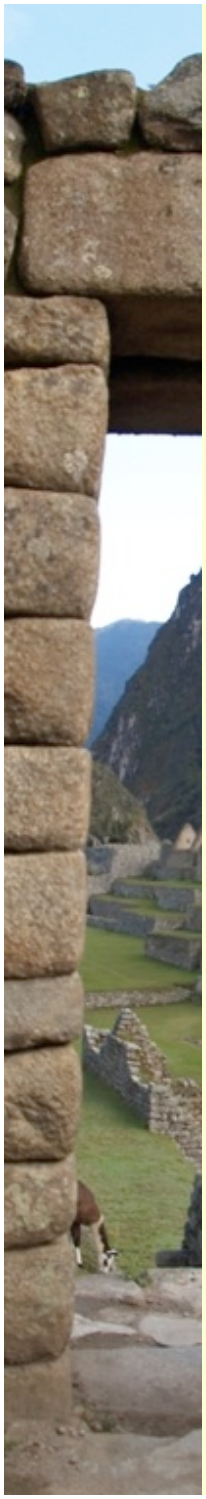
  I probably see myself getting a job in some sort of NGO or department, and then **collecting data and doing surveys** ... and **finding things that other people have done**, and then either being able to **support that or prove it wrong**.

(2008 interview of 2007 First Year Human Biology Student)



Professor Lyn Taylor of Dalhousie University, Canada stated:

... the *Framework* opens opportunities to develop research skills to a much broader spectrum of the student population and embraces the full scope of scholarly activity in an academic community. Dalhousie University is actively exploring how the *Framework* may be integrated in its undergraduate programs.



Professor Lyn Taylor of Dalhousie University, Canada stated:

... There is also strong evidence to suggest that an elaboration of the *Research Skills Development Framework* to include the development of postgraduates and early-career researchers would be a valuable initiative... Consequently, the proposed elaboration of the existing *Research Skills Development Framework* to bridge the gaps experienced by postgraduate and early career researchers is an important initiative that would have a positive impact on building research capacity well beyond the institutions directly involved in this proposal. Dalhousie University would be most interested in the results of this project.