Research Skill Development Framework

<table>
<thead>
<tr>
<th>Extent of Students’ Autonomy</th>
<th>Level 1 (Prescribed Research)</th>
<th>Level 2 (Bounded Research)</th>
<th>Level 3 (Scaffolded Research)</th>
<th>Level 4 (Student-initiated Research)</th>
<th>Level 5 (Open Research)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly structured directions and modelling from educator prompt student research</td>
<td>Boundaries set by and limited directions from educator channel student research</td>
<td>Scaffolds placed by educator shape student independent research</td>
<td>Students initiate the research and this is guided by the educator</td>
<td>Students research within self-determined guidelines that are in accord with discipline or context.</td>
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<tr>
<td>Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided structured approach to clarify questions, terms, requirements and expectations.</td>
<td>Respond to questions/tasks required by and implicit in a closed inquiry. Choose from several provided structures to clarify questions, terms, requirements and expectations.</td>
<td>Respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, terms, requirements and expectations.</td>
<td><em>Generate questions/aims/hypotheses framed within structured guidelines</em>.</td>
<td><em>Generate questions/aims/hypotheses based on experience, expertise and literature</em>.</td>
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<tr>
<td>Collect and record information/data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.</td>
<td>Collect and record required information/data using a prescribed methodology from prescribed source/s in which the information/data is not clearly evident.</td>
<td>Collect and record self-determined information/data from self-selected sources using one of several prescribed methodologies.</td>
<td>Collect and record self-determined information/data from self-selected sources, choosing an appropriate methodology based on structured guidelines.</td>
<td>Collect and record self-determined information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.</td>
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<tr>
<td>Organise information/data using prescribed structure. Manage linear process provided.</td>
<td>Organise information/data using a choice of given structures. Manage a process which has alternative pathways.</td>
<td>Organise information/data using recommended structures. Manage self-determined processes with multiple possible pathways.</td>
<td>Organise information/data using student-determined structures, and manage the processes, within the parameters set by the guidelines.</td>
<td>Organise information/data using student-determined structures and management of processes.</td>
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<tr>
<td>Analyse and synthesise information/data to reproduce existing knowledge in prescribed formats. <em>Ask emergent questions of clarification/curiosity</em>.</td>
<td>Analyse and synthesise information/data to reorganize existing knowledge in standard formats. <em>Ask relevant, researchable questions emerging from the research</em>.</td>
<td>Analyse and synthesise information/data to construct emergent knowledge. <em>Ask rigorous, researchable questions based on new understandings</em>.</td>
<td>Analyse and create information/data to fill knowledge gaps stated by others.</td>
<td>Analyse and create information/data to fill student-identified gaps or extend knowledge.</td>
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</tr>
<tr>
<td>Use mainly lay language and prescribed genre to demonstrate understanding for lecturer/teacher as audience. Apply to a similar context the knowledge developed. Follow prompts on ESC issues.</td>
<td>Use some discipline-specific language and prescribed genre to demonstrate understanding from a stated perspective and for a specified audience. Apply to different contexts the knowledge developed. Specify ESC issues.</td>
<td>Use discipline-specific language and genres to demonstrate scholarly understanding for a specified audience. Apply the knowledge developed to diverse contexts. Specify ESC issues in initiating, conducting and communicating.</td>
<td>Use discipline-specific language and genres to address gaps of a self-selected audience. Apply innovatively the knowledge developed to a different context. Probe and specify ESC issues in each relevant context.</td>
<td>Use appropriate language and genre to extend the knowledge of a range of audiences. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ESC issues that emerge broadly.</td>
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</table>

*Research Skill Development (RSD), a conceptual framework for primary school to PhD, developed by John Willison and Kerry O’Regan in October, 2006/February, 2013, with much trialling by Eleanor Peirce and Mario Ricci. Facets based on: ANZIIL (2004) Standards & Bloom’s et al (1966) Taxonomy. * Framing researchable questions often requires a high degree of guidance and modelling for students and, initially, may need to be scaffolded as an outcome of the researching process (Facet E, Levels 1-3). After development, more students are able to initiate research (Facet A, Levels 4 & 5). The perpendicular font reflects the drivers and emotions of research. Framework, resources, learning modules and references available at [http://www.rsd.edu.au](http://www.rsd.edu.au). For information: john.willison@adelaide.edu.au*
## Researcher Skill Development Framework

A conceptual framework for the explicit, coherent, incremental and cyclic development of the skills associated with researching. © Aug 2008/March 2013 John Willison, Kerry O’Regan.

### Prescribed Research
- Highly structured directions and modelling from supervisor prompt the research.

### Bounded Research
- Boundaries set by and limited directions from supervisor channel research.

### Scaffolded Research
- Scaffolds placed by supervisor shape the independent research.

### Researcher-initiated
- Researchers initiate and supervisors guide.

### Open Research
- Research is within self-determined guidelines that are in accord with discipline or context.

### Adopted Research
- Research informs others’ agendas.

### Enlarging Research
- Research enlarges the field of inquiry.

### Curious
- Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided approach to clarify questions and requirements.

### Determined
- Respond to questions/tasks arising implicitly from a closed inquiry. Choose from several provided structures to clarify questions and requirements.

### Curious
- Respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify salient elements.

### Open
- Generate questions/aims/hypotheses based on experience, expertise and literature.

### Decisive
- Identify previously unlisted gaps in literature and articulate research directions in response to them.

### Constructive
- Articulate research directions that expand the field and followed by it.

### Facet of Research

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<tr>
<td>supervisor initiated</td>
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<tr>
<td>researcher initiated</td>
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<td>discipline building</td>
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### b. Embark & Clarify
- Respond to or initiate research and clarify or determine what knowledge is required, needing ethical/social and cultural considerations.

### b. Find & Generate
- Collect and record required information/data using appropriate methodology.

### c. Evaluate & Reflect
- Evaluate information/data and reflects on inquiry process using self-determined criteria.

### d. Organise & Manage
- Organise information/data using prescribed structure. Manage linear process provided.

### e. Analyse & Synthesise
- Analyse and synthesise information/data to reproduce existing knowledge in prescribed standard formats, *Ask emergent questions*. Analyse and synthesise information/data to construct emergent knowledge. *Ask rigorous, researchable questions*.

### f. Communicate & Apply ethically
- Use prescribed genre to demonstrate understanding. Apply to a similar context the knowledge developed. Follow prompts on ESC issues.

### Definitions

- **Curious**: Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided approach to clarify questions and requirements.

- **Determined**: Respond to questions/tasks arising implicitly from a closed inquiry. Choose from several provided structures to clarify questions and requirements.

- **Open**: Generate questions/aims/hypotheses based on experience, expertise and literature.

- **Decisive**: Identify previously unlisted gaps in literature and articulate research directions in response to them.

- **Constructive**: Articulate research directions that expand the field and followed by it.

### Open Research

- Research is within self-determined guidelines that are in accord with discipline or context.

### Adopted Research

- Research informs others’ agendas.

### Enlarging Research

- Research enlarges the field of inquiry.

### www.rsd.edu.au

(RSD) issues.

Follow prompts on ESC issues in initiating, conducting, communicating. Change the direction of the conversation across disciplines. Articulates and promote ESC issues previously unlisted.

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