## Research Skill Development Framework

**A conceptual framework for the explicit, coherent, incremental and spiralling development of students’ research skills**

### Extent of Students’ Autonomy

<table>
<thead>
<tr>
<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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**Criteria**

- **Curious**
  - a. **Embark & Clarify**
    - Respond to or initiate research and clarify or determine what knowledge is required, heeding ethical/cultural and social/team considerations.
  - b. **Find & Generate**
    - Find and generate needed information/data using appropriate methodology.
  - c. **Evaluate & Reflect**
    - Determine and critique the degree of credibility of selected sources and of data generated, and reflect on the research processes used.
  - d. **Organise & Manage**
    - Organise information/data using prescribed structure. Manage linear process provided.
  - e. **Analyse & Synthesise**
    - Analyse information/data critically and synthesise new knowledge to produce coherent individual/team understandings.
  - f. **Communicate and Apply**
    - Use mainlay language and prescribed genre to demonstrate understanding for lecturer/teacher as audience. Apply to a similar context the knowledge developed.

**Facets**

- **Determining**
  - a. **Embark & Clarify**
    - Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided structured approach to clarify questions, terms, requirements and expectations.
  - b. **Find & Generate**
    - Collect and record required information/data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.
  - c. **Evaluate & Reflect**
    - Evaluate information/data and reflect on the inquiry process using given criteria.
  - d. **Organise & Manage**
    - Organise information/data using a choice of given structures. Manage a process which has alternative pathways.
  - e. **Analyse & Synthesise**
    - Analyse and synthesise information/data to reproduce existing knowledge in prescribed formats. *Ask emergent questions of clarification/curiosity*.
  - f. **Communicate and Apply**
    - 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.

- **Determined**
  - a. **Embark & Clarify**
    - Respond to questions/tasks required by and implicit in a closed inquiry. Choose from several provided structures to clarify questions, terms, requirements and expectations.
  - b. **Find & Generate**
    - Collect and record required information/data from self-selected sources using one of several prescribed methodologies.
  - c. **Evaluate & Reflect**
    - Evaluate information/data and inquiry process using criteria related to the aims of the inquiry. Reflect insightfully to improve own processes used.
  - d. **Organise & Manage**
    - Organise information/data using recommended structures. Manage self-determined processes with multiple possible pathways.
  - e. **Analyse & Synthesise**
    - Analyse and synthesise information/data to construct emergent knowledge. *Ask rigorous, researchable questions based on new understandings*.
  - f. **Communicate and Apply**
    - Use some discipline-specific language and prescribed genre to demonstrate scholarly understanding for a specified audience. Apply the knowledge developed to diverse contexts. Specity ESC issues in initiating, conducting and communicating.

- **Discursive**
  - a. **Embark & Clarify**
    - Respond to questions/tasks generated from a closed inquiry. *Generate questions/aims/hypotheses framed within structured guidelines*.
  - b. **Find & Generate**
    - Collect and record self-determined information/data from self-selected sources, choosing an appropriate methodology based on structured guidelines.
  - c. **Evaluate & Reflect**
    - Evaluate information/data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines. Reflect insightfully to refine others’ processes.
  - d. **Organise & Manage**
    - Organise information/data using student-determined structures, and manage the processes, within the parameters set by the guidelines.
  - e. **Analyse & Synthesise**
    - Analyse and create information/data to fill knowledge gaps stated by others.
  - f. **Communicate and Apply**
    - Use discipline-specific language and genres to address gaps of a self-selected audience. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ESC issues in each relevant context.

Research Skill Development (RSD), a conceptual framework for Primary school to PhD, developed by John Willison and Kerry O'Regan ©, October, 2006/November, 2012. Facets based on: ANZIIL (2004) Standards & Bloom’s et al (1956) 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 research 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 info: john.willison@adelaide.edu.au