Quality and Engaging Student Research Projects:

A Student Development Theory Approach

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Setting the Context

- Faculty Learning Community for Exploring Student Information Competency
  - 8 years; ~100 members (including 85+ faculty)
  - Students and quality research
  - Assignment/Partnership based
How Students Conduct Research

Four stages for finding context

1. Big Picture
2. Language
3. Situational
4. Information Gathering

Top Five Frustrations

- Information overload (e.g., the more you know, the less you know)
- Too much irrelevant information, can’t locate what is needed from online results.
- Beginning and getting started on an assignment.
- Trying to find the “perfect source.”
- Not knowing what to look for, yet still sifting through articles that might fit.
# Student Perceptions Tool

When you need information for a paper, how often do you use the following resources?

<table>
<thead>
<tr>
<th>Resource</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Regularly</th>
<th>Frequently</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarian</td>
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<td>Professor/TA</td>
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<td>Friends or colleagues</td>
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<tr>
<td>Google (or another search engine)</td>
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<tr>
<td>Google Scholar</td>
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<tr>
<td>Library Resources (Books, Videos, Journals)</td>
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<tr>
<td>Course Textbook</td>
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<tr>
<td>Wikipedia</td>
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</tbody>
</table>

Please think about the work you do for your research assignments and indicate whether you agree or disagree with the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am prepared to do library research</td>
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<tr>
<td>I am confident in my ability to use library resources</td>
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<tr>
<td>Conducting library research is not relevant to the course or major.</td>
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<td>My instructors place too many restrictions on the types of resources I may use</td>
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<tr>
<td>I understand why my instructors place restrictions on the types of resources I may use</td>
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<tr>
<td>When I am doing research, I generally believe most information I find.</td>
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<td>The amount of information that I find overwhelming me.</td>
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<td>I am confident citing the information I use for research projects.</td>
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<td>The skills I have used to find scholarly information in one class can be utilized in other classes.</td>
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<tr>
<td>The skills I have used to find scholarly information can be utilized in a job setting.</td>
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<tr>
<td>Wikipedia is a source of scholarly information.</td>
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<td>I prefer using online resources over resources available only in print.</td>
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<tr>
<td>I plan a search strategy before I began to look for information.</td>
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<tr>
<td>I have learned to use resources at the library.</td>
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<tr>
<td>I experience difficulties when I begin to find information for a research paper or project.</td>
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<tr>
<td>I understand the difference between quoting, summarizing, and paraphrasing.</td>
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</tbody>
</table>
Results

Google is the first place I look for information.

I am confident in my ability to use technology.
Results

I understand the difference between summarizing, quoting, and paraphrasing.

- Strongly Agree: 26.3%
- Agree: 22.5%
- Neutral: 12.7%
- Disagree: 34.2%
- Strongly Disagree: 4.3%

I generally believe most information I find.

- Strongly Agree: 5.8%
- Agree: 52.9%
- Neutral: 23.0%
- Disagree: 15.3%
- Strongly Disagree: 2.1%
Information Literacy Components

- Tangible
- Developed over time
- Six different steps in each
- Outcomes & best practices
<table>
<thead>
<tr>
<th>Competency Levels:</th>
<th>Information Literacy Components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACRL 1:</strong> Defines and articulates the need for information</td>
<td>Framing the Research Question</td>
</tr>
<tr>
<td><strong>ACRL 2:</strong> Accesses needed information effectively and efficiently</td>
<td>Accessing Sources</td>
</tr>
<tr>
<td><strong>ACRL 3:</strong> Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system</td>
<td>Evaluating Sources</td>
</tr>
<tr>
<td><strong>ACRL 4:</strong> Uses information effectively to accomplish a specific purpose</td>
<td>Evaluating Content</td>
</tr>
<tr>
<td><strong>ACRL 5:</strong> Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally</td>
<td>Using Information for a Specific Purpose</td>
</tr>
<tr>
<td><strong>Framing the Research Question</strong></td>
<td>Understands Contexts and Ethics of Information Use</td>
</tr>
<tr>
<td>- Begins to understand the value of finding evidence to support ideas and opinions</td>
<td>- Identifies keywords, synonyms, and related terms to describe information need effectively</td>
</tr>
<tr>
<td>- Identifies basic structured search methods including Boolean logic</td>
<td>- Understands that there are differences (quality, structure, verbiage, etc.) in sources of information</td>
</tr>
<tr>
<td>- Uses advanced searching techniques, thesauri, and other tools to focus searching that may be unique to each source</td>
<td>- Explores the perspective/bias of sources</td>
</tr>
<tr>
<td>- Articulates a focused research question</td>
<td>- Organizes informational content to support the purposes of the student’s product</td>
</tr>
<tr>
<td>- Articulates a focused research question</td>
<td>- Understands the difference between quoting, paraphrasing, and summarizing</td>
</tr>
<tr>
<td><strong>Thematic Intermediate</strong></td>
<td>- Identifies an author’s thesis/main point and basic structure of the information</td>
</tr>
<tr>
<td>- Recognizes that knowledge can be organized into disciplines that influence the way information is presented and accessed, and that much knowledge crosses disciplines (i.e. interdisciplinarity)</td>
<td>- Develops the ability to analyze information and evaluate relative points of view</td>
</tr>
<tr>
<td>- Understands basic structured search methods including Boolean logic</td>
<td>- Effectively organizes informational content to support the purposes of a product using multiple sources</td>
</tr>
<tr>
<td>- Reviews information retrieved to assess the reliability of the source using multiple criteria</td>
<td>- Develops the ability to quote, paraphrase, and summarize information appropriately</td>
</tr>
<tr>
<td>- Understands the relative value and differences in sources and formats of information (e.g. book, website, multimedia, data set, visual, etc.)</td>
<td>- Cites information in proper style based on course/discipline requirements</td>
</tr>
<tr>
<td><strong>Capstone Gateway?</strong></td>
<td>- Demonstrates the ability to refine topics after reviewing retrieved information</td>
</tr>
<tr>
<td>- Articulates a focused research question</td>
<td>- Modifies search strategies to ensure that information retrieved is comprehensive enough to address the issue at a level appropriate for a senior</td>
</tr>
<tr>
<td>- Uses advanced searching techniques, thesauri, and other tools to focus searching that may be unique to each source</td>
<td>- Develops ability to integrate and organize knowledge.</td>
</tr>
<tr>
<td>- Articulates a focused research question</td>
<td>- Blends research within multiple formats to expand upon current research</td>
</tr>
<tr>
<td>- Utilizes citation searching resources to identify other frequently cited works</td>
<td>- Understands the fundamentals of copyright and free use.</td>
</tr>
</tbody>
</table>
- Evidence
- Finding keywords
- Different kinds of sources
- Quoting vs paraphrasing
- Plagiarism
- Best practices
Disciplines and interdisciplinarity
Evaluation
Quoting & paraphrasing
Discipline-specific style guidelines
Best practices
Capstone (Gateway)

- Refine & focus
- Use the appropriate databases & search techniques
- Understand copyright & free use
- Best practices
Foundational research done by William G. Perry, first published in his 1968 *Forms of intellectual and ethical development in the college years*

Outlines nine positions in a schema whereby a person begins by simplistically interpreting the world in polar terms of absolute right and wrong, good or bad and ends by affirming personal commitments “in a world of contingent knowledge and relative values”

Shift from dualist thinking to relativist thinking

Robert Kegan’s Evolving Self

Six Developmental Stages of Mental Complexity involving “the developing person’s distinction between self and other, or...between subject and object”

Stage 0 – Incorporative
Stage 1 – Impulsive
Stage 2 – Imperial/Instrumental
Stage 3 – Interpersonal/Socialized
Stage 4 – Institutional/Self-Authoring
Stage 5 – Inter-Individual/Self-Transforming


Marcia Baxter Magolda’s Theory of Self-Authorship

- Defined by the shift from accepting knowledge from authorities to constructing knowledge [oneself], made possible by a shift from defining [oneself] through others’ perceptions to defining [oneself] based on internally constructed values.

- Based on her longitudinal study of Miami University students, self-authorship begins to happen toward the end of the college years, most evident in late 20s and early 30s.


The Self-Authorship Journey

- External Formulas
- Crossroads
  - Listening to Internal Voice
  - Cultivating Internal Voice
- Self-Authorship
  - Trusting the Internal Voice
  - Building on Internal Foundation
  - Securing Internal Commitments
Three Elements of Self-Authorship

All elements depend on the balance of intrapersonal and interpersonal dimensions, including

- Faith in one’s knowledge system
- Construction of an inner psychological life
- An ability to regulate one’s relationships with others to maintain identity

You can’t assume everyone is at the same developmental level because of class level or standing.

But...how do you figure it out??

And...how do you rethink assignments based upon what you find out?
Figuring it all out

- Easy, but hard to keep track
  - Student interactions
  - Intermediate evaluations
- Easy, but hard to collate
  - Survey tools and questionnaires
- Easy, and easy to collate
  - Biographical writing prompt
    - What academic or professional issues, fields, problems and topics most intrigue you?
    - What ideas, books, courses, or events have had the most impact on you?
Crafting assignments that meet most student needs, but still push them a bit.

Flexibility for those with different developmental frameworks

Tweaks and small changes suffice in most cases!
Struggle 1: Source Requirements

- External Formula students ‘need’ you to provide some structure.
- Crossroads may want more flexibility.
- Some suggestions
  - General guidelines plus wiggle room
  - Holistic view of sources
  - Discuss why different types of sources are important
Struggle 2: Evaluating Sources

- Structure is needed at all levels (but...)

- External Formulas: CRAAP test, or the 5Ws

- Crossroads: Research Journal (i.e. critically thinking about the searching)
Struggle 3: The ‘Right’ Sources

- Be careful with suggestions.
- “Look here”. “Google is bad.” “You cannot use web sources”. NOT HELPFUL!
- Demonstrate the value of source via the student’s contextual knowing.
- Suggest methods rather than specific sources.
- Create partnerships!
Struggle 4: Using the Ideas of Others

- Quoting is ‘easy’, but why summarize when someone else has done it already (and better?)
- Be very clear with your expectations (especially for external formula students)
- Students often need extensive work with summarizing and paraphrasing
- Revisions!
- Partnerships!!
Struggle 5: NO TIME......

- Do I have to grade another research paper??
- Peer review/grading
- Creative projects (and their pitfalls)
  - Infographics
  - Wikipedia articles
  - Posters
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Eric Resnis
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Kimberly Tully