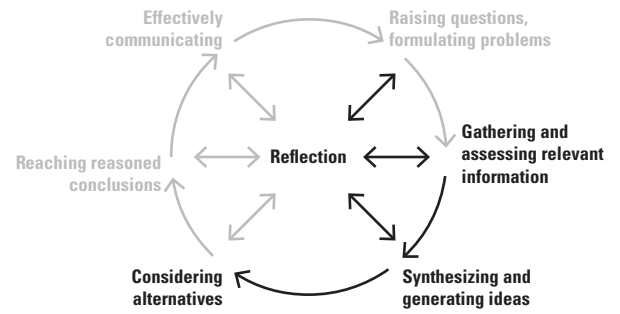


THINK

Higher-Order Skills in Critical and Creative Thinking
Resource Sheets for Teaching and Learning



SYNTHESIS MATRIX

OVERVIEW

Oftentimes in the research process, students can become overwhelmed with the diversity of information they have found. Strategies to organize information and research can help students start to see patterns in their work, as well as where there might be gaps. It also opens up opportunities for critical discussion in the classroom about how content is being gathered, interpreted, and ultimately used in support of an argument.

SYNTHESIS MATRIX ACTIVITIES

	Source 1	Source 2	Source 3	Source 4
Main Idea #1				
Main Idea #2				

Using a Synthesis Matrix for a Literature Review

Students can use the matrix to summarize and align their sources with the appropriate main ideas. Sources might fit in multiple categories, in which case the main idea might change. Encourage them to include specific quotes or paraphrasing to support that main idea.

Possible discussion questions:

- Are all of these sources relevant?
- What basic assumptions is this research building upon?
- What alternative viewpoints are missing from this research?

Using a Synthesis Matrix to Write Research Questions and Formulate Problems

Students can also use the matrix format to break apart a research topic they are starting to study. Replace “Main Idea” in the matrix with “Topics” and then student research can focus on what existing research is out there. This use of the matrix can illuminate where existing research has focused as well as where there are gaps.

Possible discussion questions:

- Where are there gaps in the existing research on this topic?
- Are there consistencies/inconsistencies across authors on certain topics?

READINGS & RESOURCES

Barkley, Elizabeth F., Major, Claire Howell, and Cross, K. Patricia. *Collaborative Learning Techniques: A Handbook for College Faculty*. Jossey-Bass, 2014.

Bean, John. *Engaging Ideas: The Professor’s Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. Jossey-Bass, 2011.

See also: **Writing to Think** and **Lotus Blossom** at <https://think.dasa.ncsu.edu>

Synthesis Matrices and Divergent Thinking

Matrices can also be used in the brainstorming or idea-generating phase of a project by using the critical and creative thinking process to force or form new associations. For example, in trying to brainstorm a short fiction writing assignment, “main idea” could be replaced with “genre” and the sources could be replaced with scenarios or scenes. Then the intersection of those two things could be the beginning of that story.