

*Constructing Interdisciplinary Competence:
Experimentation and Process*

**Innovative Pedagogy & Course Redesign:
Collaborations for Empowerment & Learning
Fairfield University
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*Debora Johnson-Ross, PhD and Vera Jakoby, PhD
McDaniel College*



Why?

- ? National and international discussion about the quality of college education.
- ? Student preparation for the 21st century.
- Only one in four employers thinks that two-year and four-year colleges are doing a good job in preparing students for the challenges of the global economy.

SELECTED LIBERAL EDUCATION OUTCOMES

- **8%** seniors are “proficient” at level 3 **math**, up from **5%** of freshmen
- **11%** seniors are “proficient” at level 3 **writing**
- **6%** seniors are “proficient” in **critical thinking**, **77%** are “not proficient”
- Less than **13%** of college students achieve basic competence in a **language other than English**
- Less than **34%** of college students earn credit for an **international studies class**; of those who do, only **13%** take more than four classes
- Less than **10%** of college students participate in study abroad programs
- Between **5** and **10%** of college students achieve basic competence in a language other than English, take more than 4 international studies classes, and participate in study abroad programs

Academic Profile, Educational Testing Service (2003–04); Clifford Adelman, “Global Preparedness’ of Pre-9/11 College Graduates: What the U.S. Longitudinal Studies Say,” 10 (2004): 243.

***A Crucible Moment:
College Learning and Democracy’s
Future (AAC&U, 2012)***

Connecting college learning with societal needs

- **Economic Challenges**
- **Civic and Global Challenges**

The Principles of Excellence

1. Aim High—and Make Excellence Inclusive
2. Give Students a Compass
3. Teach the Arts of Inquiry and Innovation
4. Engage the Big Questions
5. Connect Knowledge with Choices and Action
6. Foster Civic, Intercultural, and Ethical Learning
7. Assess Students' Ability to Apply Learning to Complex Problems

The Essential Learning Outcomes

1. Knowledge of Human Cultures and the Physical and Natural World
2. Intellectual and Practical Skills
3. Personal and Social Responsibility
4. Integrative and Applied Learning

Matching big questions and outcomes

Excellence Principle 4

Engage the Big Questions

Teach through the Curriculum to Far-Reaching Issues—Contemporary and Enduring—in Science and Society, Cultures and Values, Global Interdependence, the Changing Economy, and Human Dignity and Freedom

Essential Learning Outcome 4

Integrative and Applied Learning, including

Synthesis and advanced accomplishment across general and specialized studies
Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

Definitions

Interdisciplinary

Intentionally incorporates **two or more disciplinary perspectives** in order to advance a **comprehensive understanding of problems and/or issue**.

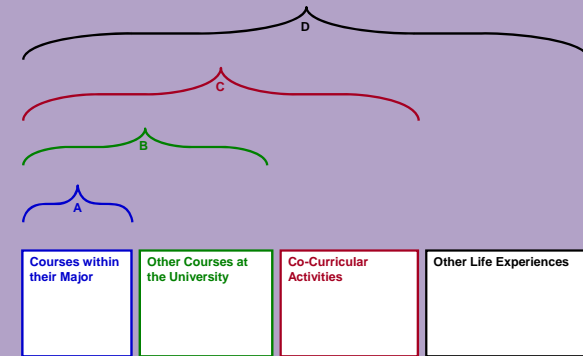
Integrative

... is an understanding and a disposition that a **student builds across the curriculum and co-curriculum**, from making simple connections among ideas and experiences to **synthesizing and transferring learning to new, complex situations** within and beyond the campus.

Complementary Approaches!

- Because disciplines stand *outside* the complex situation and view it from different angles, they naturally see different aspects and arrive at different understandings of it. [LEARN]
- Integrative learning experiences bring students into contact with people who are *inside* the complex situation. [APPLY]
 - Internships
 - Study abroad

Broad Application



Learning Relationships, Source: Dr. L. Dee Fink

Challenges and Responses

- Institutional culture
- Disciplinary protectionism
- Inexperience with interdisciplinary and integrative approaches
- Intentionality, Leadership, Time
- Respect for the knowledge and skills of others
- Faculty Development:
 - Workshops
 - Professional learning communities
 - Conferences

A Liberal Education

is an approach to learning that **EMPOWERS** individuals and **PREPARES** them to deal with **complexity, diversity, and change**. It provides students with broad **knowledge** of the wider world (e.g. science, culture, and society) as well as **in-depth study in a specific area of interest**. A liberal education helps students **DEVELOP** a sense of **social responsibility**, as well as **strong and transferable intellectual and practical skills** such as communication, analytical and problem-solving skills, and a demonstrated ability to **apply knowledge and skills in real-world settings**.

http://www.aacu.org/leap/What_is_liberal_education.cfm

Education is that whole system of human training within and without the school house walls, which molds and develops men [and women].

- W. E. B. DuBois

http://www.brainyquote.com/quotes/authors/w/w_e_b_du_bois.html#cODyb0k3rfyXis2B.99

Backward Design

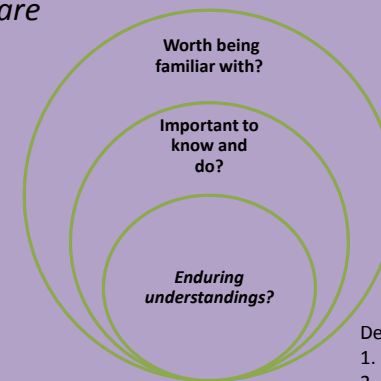
- Grant Wiggins and Jay McTighe
- *Understanding by Design*, 2005, Prentice Hall, Expanded 2nd edition
- Framework for designing courses beginning with outcomes rather than course topic.

3 Phases of backward design

1. Identify desired results
2. Determine acceptable evidence
3. Plan learning experiences and instruction

1. Identify desired results

What is/are



- Determine
1. best course content
 2. specific learning goals

2. Determine acceptable evidence

How will you know if students are gaining the knowledge and skills you identify as necessary?

Use a variety of assessments

- Essay questions
- Low stakes writing assignments
- Homework assignments
- Lab work
- presentations

Remember:

Assignments must align with the knowledge/skill to be assessed.

For example, problem-solving is learned by practice
→ assign problem-solving exercises.

3. Plan learning experiences & instruction.

Now start planning with a focus on **deep understanding**

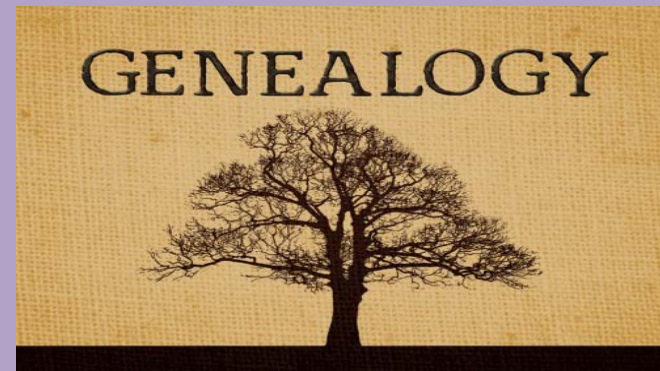
- instructional strategies
- learning activities
- evaluation tools

Sources

- Grant Wiggins and Jay McTighe. 2005. *Understanding by Design*, Prentice Hall, Expanded 2nd edition.
- “Understanding by Design Overview,” Vanderbilt University Center for Teaching, <http://cft.vanderbilt.edu/teaching-guides/pedagogical/understanding-by-design/>

How to Construct
Interdisciplinary Research Assignments?

EXAMPLE



Definitions of Wide Conceptual Frames

- **Interdisciplinary work:** people from two or more academic disciplines work together in pursuit of common goals and modify their disciplinary methods and viewpoints in order to understand a particular phenomena, issue, problem, etc.
- **Multidisciplinary work:** people from two or more disciplines work together on a common problem, but without altering their disciplinary approaches or developing a common conceptual framework.
- **Cross-disciplinary:** designed as a hierarchy of a primary discipline with one or more secondary disciplines.

See: Lattuca, L. R., *Creating Interdisciplinarity: interdisciplinary research and teaching among college and university faculty*. Vanderbilt University Press, Nashville, 2001.

What is Interdisciplinary Research?

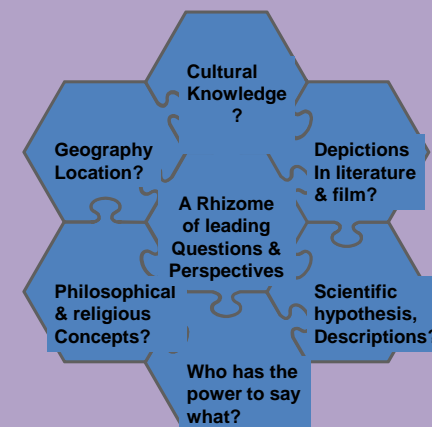
1. An interdisciplinary study has a specific substantive focus, which **exceeds** the scope of a **single perspective**.
2. The distinctive characteristic of the focus of an interdisciplinary study is that it is broad or **complex** and is characterized by an identifiable process/mode.
3. Interdisciplinary studies draw explicitly on the **disciplines** which provide insights into the specific substantive focus of an interdisciplinary study and require **integration**.
4. The goal of interdisciplinary study is **pragmatic**: to solve a problem, resolve an issue, address a topic, answer a question, explain a phenomenon, or create a new product.

From W.H. Newell, Six Arguments for agreeing on a definition of interdisciplinary studies, *AIS Newsletter*, volume 29, 2007.

Challenges for Students to do interdisciplinary research/genealogy

- Students get overwhelmed by disciplinary approaches
- Students tend to focus on research questions/projects close to their majors/minors
- Finding textual models for interdisciplinary research
- Example/Course on Alcohol:
 - B. Conrad III, *Absinthe. History in a Bottle*. Chronicle Books, San Francisco, 1997; J.Adams, *Hideous Absinthe: a History of the Devil in a Bottle*. Tauris, London, 2004.
 - L.G. Solmonson, *Gin: A Global History*. Reaction Books, London 2012)

What is a Genealogy?



M. Foucault, "Nietzsche, Genealogy, History," (1971)

- *Genealogy is gray, meticulous and patiently documentary. Genealogy is gray because it is not black or white; it is not random or haphazard but a careful consideration of texts that have been written and rewritten from multiple perspectives.* (144)
- Friedrich Nietzsche (1844-1900) is first to use the term and derives it from J.G. Herder's (1744-1803) "genetic method."



Description of Genealogy

Michel Foucault (1926-1984), *Language, Counter-Memory, Practice: Selected Essays and Interviews*

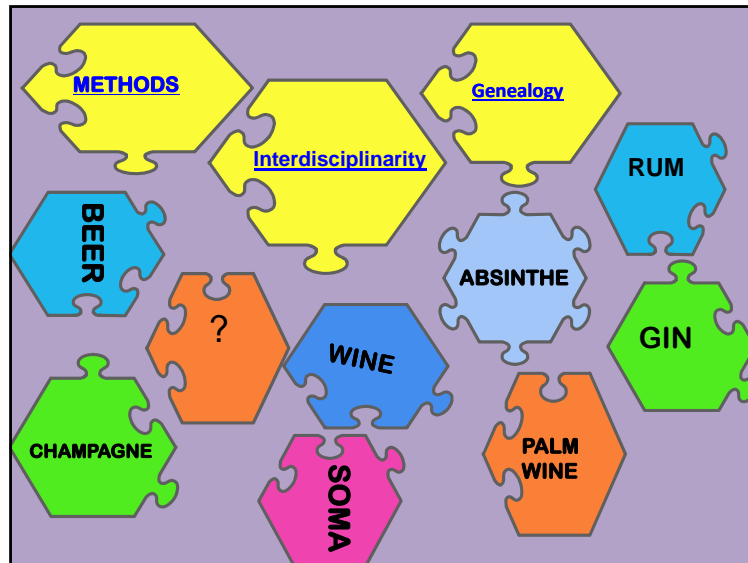
- Genealogy: an investigation into the rhizome of the past looking for connections, perspectives, **correlations between narration and acceptability of cultural items**;
- Who had the **power and knowledge** to change to way we look and speak about a cultural item?
=> Perfect writing style to **unearth marginalized voices** in a complex net of history & culture

Considerations for the Interdisciplinary Writing Process

- **a) Decision-making process:** researchers/writers need to "pick from discipline respective viewpoints, tools, and methodologies and have then to decide which are the **most useful for further developing "an integrated and purposeful understanding"** (12).
- **b) Discovery & integrated understanding:** researchers/writers "engage concepts, issues, or problems individually or collectively by introducing multiple decision points or steps...using **experimentation or trial and error to achieve integrated understanding"** (138).
- From: Allan Repko, *Interdisciplinary Research: Theory and Process*, Sage Publications, Thousand Oaks, 2008.

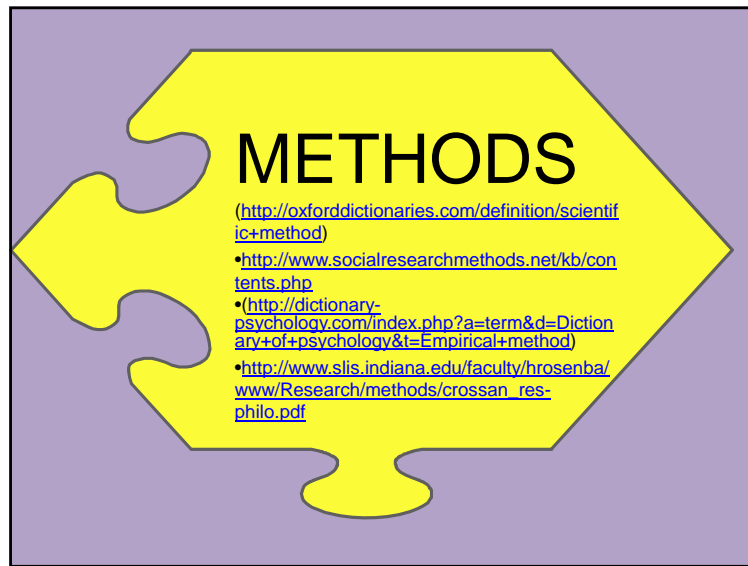
Example: Alcohol Genealogies

Sequenced
Peer Research Project



Brainstorming

- Select an alcoholic cultural item and reflect on your associations with this item.
- Determine which disciplinary perspective, century, cultural, religious, historical background you want to study.
- Discuss with your group how your various disciplinary perspectives are relevant to explore the topic.



Writing: Stage 1

Expressive Stage: Why did you pick this particular alcoholic item?

- Anecdotal, short story, poem, drawing, painting
- Film description
- Animoto: <http://animoto.com/play/0c9szPGMkJToJeVGXT2meA?autostart=true>

Learning Goals:

- To explore and **discover one's voice** or voices in a reflective, creative manner;
- To gain a more self-conscious **awareness of one's writing process** and **integrate other voices**/creative products in one's own approach.
- Modeled on Interdisciplinary Writing and the Undergraduate Experience: A Four-Year Writing Plan Proposal by Carolyn Haynes (http://www.units.muohio.edu/aisorg/pubs/issues/14_haynes.pdf)

Example: Food, Stage 1

Your Examples

- <http://www.youtube.com/watch?v=ZBKHe9tvhAo>

Woman Holding a Fruit Paul Gauguin (1848-1903)
-- French Post-Impressionist Painter 1893



Writing: Stage 2

Analytical & Disciplinary Stage: What texts, films, artwork, studies, experiments, etc., in regards to your selected alcoholic item, will you analyze and what will be your guiding questions?

- **Learning Goals:**
- To gain a **basic understanding** of the thinking and writing done in two or three disciplines;
- To read **contradictory** viewpoints from two or three thinkers from the same discipline & from different disciplines;
- To gain practice in, and a critical awareness of, two or three **research methods** used in various fields of knowledge

Example: Food, Stage 2

- What are your examples?

Writing: Stage 3

Comparative and Integrative Stage: What are the unique features of a particular discipline, and how do they compare with those of another discipline? How can you integrate your various knowledge on a specific alcoholic item and formulate differences and common ground between various disciplinary views? What new research questions emerge during your investigations and reflections?

- **Learning Goals**
- To critically analyze the limitations and benefits of a variety of disciplinary texts on a certain topic;
- To "translate" disciplinary knowledge for an audience of another discipline;
- To compare and contrast different research methods and analyze their purposes within disciplinary and interdisciplinary scholarship;
- To integrate knowledge gained from a variety of disciplines on a given topic.

Example Food, Stage 3

- What are your examples?

Sources

- L. R. Lattuca, *Creating Interdisciplinarity: interdisciplinary research and teaching among college and university faculty*. Vanderbilt University Press, Nashville, 2001.
- W.H. Newell, Six Arguments for agreeing on a definition of interdisciplinary studies, *AIS Newsletter*, Volume 29, Number 4, December 2007.
- A. Repko, *Interdisciplinary Research: Theory and Process*, Sage Publications, Thousand Oaks, 2008.



*Thank you very much for your
attention and participation
Debora Johnson-Ross, PhD
and Vera Jakoby, PhD
McDaniel College, Westminster,
MD*