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Teaching Students to Navigate Externalist and Internalist Approaches in the History of Science

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Table 1. Learning Activities

Learning activity	Description
Introduction	Examine the disciplinary alignment of academic journal publishing within history of science scholarship
Disciplinary Cultures	Explore history of science literature and identify 1) disciplinary, 2) sub-disciplinary, 3) inter-disciplinary, and multi-disciplinary configurations
Selection Grid	Complete worksheet listing journal characteristics and relevance to research interest
History Journal Characteristics (Exercise 1)	Locate articles relevant to research interest and identify characteristics of journals publishing each article
History of Science Journals (Exercise 2)	Identify salient characteristics of history of science journals and their disciplinary specializations
Internalist vs. Externalist	Determine if their own work aligns with an internalist or externalist approach

Disciplinary Configurations

- **Disciplinary** - A highly defined approach with specific methodological and technical characteristics. Specialized nomenclature and consensus-driven protocols and procedures. **Examples** - History, Philosophy; **Journal Examples**-- *American Historical Review*, *Revue Historique*.
- **Subdisciplinary** - A highly specialized approach within a disciplinary framework with specific objectives, utilizing unique methodologies and techniques. **Examples** - History of Science; History of Education; **Journal Examples**--*History of Science*, *History of Education Quarterly*.
- **Interdisciplinary** - Two or more disciplines come together to examine a topic or set of topics and meld into a permanent relationship. **Examples** - Historical Sociology, Historical Anthropology; **Journal Examples**-- *Journal of Interdisciplinary History*, *Cultural & Social History*.
- **Multidisciplinary** - Two or more disciplines providing unique perspectives to explore phenomena, while retaining their singular characteristics. **Examples** - Latin American Studies, American Studies; **Journal Examples**-- *Journal of Canadian Studies*, *Middle Eastern Studies*.

Table 2. Examples of Topics & Disciplinary Segmentation

Topic	Journal	Characteristic
Evolution	Journal of History of Biology	Specialized in biological sciences
19 th science	American Historical Review	Broad issues in history
Civil war surgery	Journal of American History	Broad issues in history
Plate tectonics	Earth Sciences	Specialized in earth sciences
Totalitarian regimes & science	Journal of Modern History	Broad issues in science and history
Newspapers and public exposure science	Social Studies of Science	Sociological aspects of science
Evolution	Journal of History of Biology	Specialized in biological sciences

Exercise 1 - Questions

- 1) What is the journal's purview: periodization, expansive or specialized?
- 2) What subjects do they broach generally?
- 3) Identify and discuss the methodologies, theories, and scope of the journals.
- 4) Is history of science, broadly, or tangentially, broached in the journal?
- 5) What are the characteristics of journals identified as history of science, and how do they differ from other history journals?

Table 3. Examples of History of Science Journals

Journal	Characteristics
Annals of Science	General—covers all sciences
Isis	General—covers all sciences
British Journal for the History of Science	General—covers all sciences
History of Science	General—covers all sciences
Journal for the History of Astronomy	Astronomy--all aspects, specialized
Journal of the History of Biology	Biological sciences—all aspects, specialized
Ambix	Chemistry, Alchemy—all aspects, specialized
Earth Sciences History	Each Sciences--all aspects, specialized

Exercise 2 – Questions

- 1) What is the journal's purview: periodization, expansive or specialized?
- 2) What subjects do they broach generally?
- 3) What is the scope of the journals and what methodologies and theories are represented?
- 4) What are the characteristics of journals identified as history of science, and how do they differ from other history journals?

Internalist Versus Externalist Approaches

- *Internalist*: pertains to the analysis of historical phenomena within the disciplinary confines that determine only those factors that can be examined within the protocols established that are not influenced by factors or conditions that originate outside the phenomena under examination. *Example - History of an ophthalmological surgical technique pioneered during the early 20th century in Scotland.*
- *Externalist*: pertains to the examination of historical phenomena within an expanded disciplinary approach that privileges internal *and* especially external factors and influences that impact upon the object of research. *Example - Political considerations of advances in U.S. rocketry during the Space Race of the 1950's.*

Table 4: Examples of Topics for Presentation and Discussion

Topic	Internalist	Externalist	Reason for Choice
Space Race	?	?	?
Medical Illustration	?	?	?
Galileo & Inquisition	?	?	?

Thank You for Your Interest

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