Learning to Write in the Sciences
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Megan Callow

Different Disciplinary Domains → Different Knowledge Systems and Educational Approaches

Scholars Have Attempted to Organize Disciplinary Systems of Knowledge

- According to Thomas Kuhn, "paradigms" (which specify problems for study, and methods for studying them) are more "highly developed" in the sciences than in the social sciences.
- Biglan's (1973) Framework: "hard" and "soft" disciplines
- There is lots of "internal agreement" within scientific disciplines about principles and methods (Stark & Lattuca, 1993)

Curriculum Tends to Reflect the Discipline

- The natural sciences domain tends to be more predictable (e.g., undergraduate course content) and structured (e.g., research methods).
- Learning is considered more sequential in the sciences. Foundational principles first, then specialization.
- "Soft disciplines tend to emphasize critical thinking, oral and written expression, and analysis and synthesis of course content, while hard disciplines tend to emphasize skills in dealing with facts and figures, with little writing required beyond the exposition of experimental results" (North, 2005, p. 519)

How Did We Learn These Values? How Do They Get Passed On to Students?

- "While students are more likely to choose specializations congruent with their preferred learning style, these preferences are also likely to be reinforced by their experience of teaching and learning within the discipline" (North, p. 519)
- The biggest influence on course development and planning is faculty's disciplinary training (Stark et al. 1990)
- Do disciplinary learning values change over time?

Please take a few moments to complete the survey. After completing it, please discuss in small groups:

Is there a "typical" path to learning to write in the sciences?

Should there be?

How might this path vary by scientific discipline?

References

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Any comments or questions, please get in touch! mcallow@uw.edu