

Review of Disciplinary Literacy and Inquiry: Teaching for Deeper Content

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The article *Disciplinary Literacy and Inquiry: Teaching for Deeper Content Learning*, by authors Hiller Spires, Shea Kerkhoff, and Abbey Graham, address the benefits of disciplinary literacy and inquiry as two approaches in learning. Disciplinary literacy has been defined as “the use of reading, reasoning, investigating, speaking, and writing required to learn and form complex content knowledge appropriate to a particular discipline” (McConachie & Petrosky, 2010, p.16). Inquiry is the need for education to use real-world scenarios, problems and challenges for students to gain new knowledge, and to develop a deeper understanding of content. The instructional path for deeper learning, the use of complex questions, developing critical thinking skills, collaboration with peers, and the development of time management is through a pedagogical approach of learning. This effective approach to teaching and learning is through Project-Based Inquiry (PBI). Reading and writing are central for intellectual development of a student, these skills are enhanced through this approach, because students are allowed additional tools for learning including technology.

PBI, has its foundation in problem-based learning (Boss & Karuss, 2007; Buck Institute of Education, 2009), the method of creating a strong direction to real-world problems. The inquiry approach allows a myriad of technology tools and resources for students to explore and create new knowledge by answering compelling questions. The purpose of PBI approach is to allow the students the opportunity to engage in authentic, intellectual work, through the construction of knowledge and to produce products that have real-life meaning. The teaching of authentic material challenges students both intellectually and the ability to develop a deeper understanding of the content.

Reading and scientific investigation both require students to discover and comprehend the shared goals that are the foundation in integrated curriculum. Literacy, the ability to read,

write, speak, and think critically become fundamental importance with student preparation for their pursued fields of interest.

Historical documents, informational articles, and textbooks create a myriad of challenges for students. In order for students to comprehend the text they must be immersed in the language and thinking processes for the specific discipline being taught.

The model for relating disciplinary literacy practices identified in the article is (MOOC) massive online open course, with this model the participants found connecting the framework for relating inquiry to disciplinary-specific approaches allowed for the development and implementation of inquiry-based lessons.

The learning model which connects PBI to disciplinary literacy practices is comprise of five phases: “(1) ask a compelling question, (2) gather and analyze sources, (3) creatively synthesize claims and evidences, (4) critically evaluate and (5) revise, and share publish and act” (Spires et al., 2014).

The goal with the literacy practices is to differentiate how they may be applied in science, history, social studies, and math. Phase 1: Ask a compelling question would be high quality inquiries, open ended questions which are an invitation to gain more knowledge; The questions should be authentic, and the answers are to be constructed from multiple resources and reflections. The teacher, or student may generate the question, or it could be a collaborative effort. A sample question could be: Do volcanic eruptions have a significant impact on the environment?

After students have decided upon a compelling question they gather their resources. The model demonstrates the differentiated experts gather information and analyze their sources

during inquiry. It is suggested that students choose at least one close reading as a source, and the source should be one that is challenging.

It is essential for the students to justify their claims with the appropriate evidence, the students creatively synthesize claims they have created within the disciplinary process. The process requires the students to use complex thinking with their content by including text, print, drawing inferences, and making connections to design their final product.

The students will next critically evaluate and revise their evidences as they review their claims within the discipline. The teacher's role is to ensure generalities and high-level feedback to the students for their products. It is suggested that peer evaluation, self-evaluation, and an expert evaluation take place. Students revise their products accordingly. Formative and summative assessments are taking place, with ongoing feedback given to the students.

The final phase is the publishing and sharing of the students' inquiry products. Sharing can be done with other audiences and social media.

The design process requires cognitive skills as well as the development of social skills. Bloom's revised taxonomy depicts the processes that are used during PBI, creativity is the primary objective. When students are interested in real-world problems they have a vested interest with their learning. The cycle of inquiry allows students to share their work, more questions arise, students analyze their sources, synthesize their claims, and the opportunities are formed for deeper understanding. Through ongoing assessments and scaffolding by the teacher, the students are allowed to engage in meaningful learning.

To meet the demands in education by relating disciplinary literacy across all disciplines, students have opportunities to construct new knowledge through using content knowledge. PBI in the sciences provides students with authentic texts to learn about others' investigations of the

natural world. This allows the students to build background knowledge and to synthesize ideas in order to understand the issues being addressed. Another example of a discipline is mathematics, students in math need to be able to decode, interpret graphics and numeric symbols, and read a complex math text. Math requires students to speak with the language of the math discipline, this in turn develops a deeper understanding of math concepts.

The interdependent relationship exists in all disciplines. Literacy is fundamental to achieve content knowledge, and content is essential for the development for background knowledge in literacy development.

Boss, S., & Krauss, K. (2007). *Reinventing project-based learning: Your field guide to real world projects in the digital age*. Eugene, Or; International Society for Technology in Education.

McConachie, S.M., & Petrosky, A.R. (2010). *Content matters: A disciplinary literacy approach to improving student learning*. San Francisco, CA., Jossey-Bass.

Spires, H.A., Graham, A.C.K., & Kerkhoff, S.N. (2016, September/October). Disciplinary literacy and inquiry: Teaching for deeper content learning. *Journal of Adolescent & Adult Literacy*, 60, (2), 151-161.