

Science Teacher Induction & Electronic Journals (title by john)

My success: Neither pre-service nor in-service science teachers

Learning to teach is a developmental process during which teachers progressively refine their beliefs and practices (Anderson & Mitchener, 1994; Sikula, 1996). The process begins with preservice education, continues through the induction years, advances to the early and mid-career stage, and culminates in the master teacher or late career phase. Given this understanding of teacher development, science teacher educators have varied their curriculum and instruction to foster the evolving science teacher. Preservice teachers typically learn about basic classroom processes, induction teachers receive instruction that ensures their survival in the classroom, early career teachers acquire additional content and pedagogy, and master teachers mentor beginning teachers or participate in the instruction of beginning or experienced teachers. As science teacher educators work with science teachers during each phase, their instructional and programmatic decisions are guided by numerous papers and peer-reviewed articles that address different components in science teacher education.

In addition, various professional organizations provide developmentally appropriate resources and materials to science teachers. Yet a careful examination of the research and resources available to developing science teachers reveals an inconsistency between the phases. Specifically, induction science teachers, especially in the United States, are part of a differentiated system in which there is a limited availability of programs designed to meet their unique developmental needs (National Center for Education Statistics, 1999) and minimal research to guide the development of such programs (Adams & Krockover, 1997).

Our work over the past six years has focused on beginning secondary science teachers who participate in science-focused induction programs. We have concentrated our efforts on understanding how beginning secondary science teachers enact instruction that is based on the National Science Education Standards' [NSES] (National Research Council [NRC], 1996) "science as inquiry" standard, and we have examined the role of science-focused induction support in the development of other reform-based teaching practices. Our most recent research found that when supported by a science-focused induction program, beginning teachers experienced fewer constraints, and were more likely to implement inquiry-based instruction in their classrooms, than did secondary science teachers receiving general induction support or no formal induction support (Luft, Roehrig, and Patterson, 2003).

Ultimately, this work has really supported the need for subject-specific preparation of induction teachers. This is an area that has been overlooked and certainly needs attention by university faculty.

My Vexation: e-Journals and "why aren't we using them?"

As science teachers and science educators, we belong to a unique group of individuals. We strive to improve education by talking critically about ideas related to science education, making observations about teacher and student learning, and collecting data that we hope will shed light on the learning and teaching process of teachers and students. As we communicate with each other, we suggest innovations and confirm existing practices. Communication occurs in different venues and includes participating in informal discussions, conferences, and meetings, as well as writing e-mails, posting our findings on web pages, and publishing our work. This last venue of communication--the publishing of our work--is the focus of this vexation.

Academics and educators are often funded by public dollars. We share our work with each other in order to advance the field, but also because we have a responsibility to do so. By communicating frequently, we can build upon the knowledge base in science education, identifying and exploring ideas as they are put forth. The sharing of our work is an important component of our job, and in certain fields we can obtain long-term employment (tenure) that ensures the exploration and dissemination of novel ideas.

One of the most common ways that we share our work is through our publications. Several of us publish in notable journals such as the *Journal for Research in Science Teacher Education*, the *International Journal of Science Education*, or the *Journal of Science Teacher Education*. However, we may have also published in electronic journals such as the *Electronic Journal of Science Education* (<http://unr.edu/homepage/jcannon/ejse/ejse.html>) or *Contemporary*

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Issues in Technology and Teacher Education (<http://www.citejournal.org>). While all of these journals contain research in science education, the last two are published electronically and are designated as open-access journals. Open-access electronic journals provide us with new opportunities in the field that we have not experienced with traditional for-profit publications.

Unfortunately, our perceptions about electronic publishing sometimes limit our participation in this venue. With this said, I ask “should we encourage participation in on-line journaling,” and “if so, how?”