Sabbatical Report for Spring 2021

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Title: Implementing Next Generation Science Standards with attention to Language and Literacy Development for English Learners

Proposed Sabbatical Goals

For my sabbatical, I proposed to co-write a book to guide middle and high school science teachers in planning instruction that is aligned with Next Generation Science Standards, while simultaneously supporting all students, but particularly emergent bilinguals', language and literacy development. The book would draw on research I have engaged with through grants such as the Secondary Science Teaching with English Language and Literacy Acquisition (or SSTELLA) Project, funded by the National Science Foundation. The book would clearly translate theory into practice by using a model science unit developed by my co-author, Kelly Mackura (a local science teacher), as part of her M.A. in Education cognate.

Sabbatical Activities and Outcomes

Before my sabbatical started, an acquisition editor from Teachers College Press reached out to me about proposing a book related to the research I had been conducting for the SSTELLA Project. My co-author and I submitted an original book prospectus that included two sample chapters. We received initial anonymous reviews and then submitted a revised prospectus along with an additional three chapters. We now have a draft of all 11 Chapters of the book written. During the Fall, we anticipate receiving our second round of reviews and revising the entire book with the goal of submitting it by December 2021.

In February 2021, a call came out from the U.S. Department of Education to submit proposals for its National Professional Development Program, which seeks to develop, implement, and evaluate evidence-based models of professional support to strengthen teaching and learning for English Learners. As the proposed Principal Investigator, I convened a group of content area (e.g., math, science, English) and bilingual/dual language faculty across both Sonoma State and Cal State East Bay to work on a proposal. By the end of April, we successfully submitted the proposal, titled *Biliteracy and Content Area Integrated Preparation (BCAIP): Bridging Teachers, University Educators, and Families for Emergent Bilingual Learning* for just under $3,000,000 over 5 years.

Additionally, I finished co-writing a chapter titled "The Role of Teacher Education in Teaching Science to Emergent Bilingual Learners," which will be published in the *Handbook of Research on Science Teacher Education* by Taylor & Francis. I also revised and resubmitted a manuscript titled "Reframing Formative Assessment for Emergent Bilinguals: Linguistically Responsive Assessing in Science Classrooms," which is under review in *Science Education*.

Sabbatical Significance

The central challenge at hand for supporting emergent bilinguals in secondary science classrooms is not to eliminate the linguistic challenges involved, but rather to provide opportunities and support for students to develop the language and literacy central to the science practices at the heart of the lesson. This synergistic relationship between learning science and developing one's proficiency in language and literacy has not yet been fully embraced in science classrooms, in part due to (1) teacher exposure to outdated models of teaching science to emergent bilinguals and (2) that secondary science teachers, perhaps more so than elementary school teachers, generally consider themselves to be teachers of content rather than teachers of language, despite the fact that scientific argumentation, reasoning, and communication require a multitude of specialized written and oral literacy practices. The science teacher might be able to engage in the language and literacy related to science practice him or herself, but not know how to make instruction accessible for emergent bilinguals or promote students' language and literacy development.

The collection of sabbatical activities described promises to have theoretical and practical significance for the field of science education and for science educators to support emergent bilinguals. For example, the book chapter "The Role of Teacher Education in Teaching Science to Emergent Bilingual Learners," and manuscript "Reframing Formative Assessment for Emergent Bilinguals: Linguistically Responsive Assessing in Science Classrooms" synthesize new perspectives on how to think about the teaching of science to emergent bilinguals, which can inform how science educators are trained and supported in carrying out responsive science teaching. If funded, the grant *Biliteracy and Content Area Integrated Preparation (BCAIP): Bridging Teachers, University Educators, and Families for Emergent Bilingual Learning,* will have a tremendous impact on teachers, emergent bilinguals and their families across the North Bay and East Bay regions. In particular, the grant aims to (1) strengthen how preservice teachers are prepared to support emergent bilinguals' biliteracy in the content areas, (2) strengthen the mentorship of preservice teachers in support of emergent bilinguals' biliteracy in the content areas, and (3) promote family literacy engagement. To meet these goals, the grant would provide support for over 500 teacher candidates, over 100 inservice mentor teachers, and nearly 200 family members over five years. Finally, the featured sabbatical project, the book *Planning Science, Language, and Literacy Rich and Relevant Instruction for Emergent Bilinguals* promises to guide science teachers across the nation in strategically planning instruction in ways that has yet to be fully captured in other practitioner books around teaching science to emergent bilinguals. It certainly will be a key resource in my own class and when working with teachers in the community.

I am truly grateful for the opportunity to complete a sabbatical. I accomplished my own professional goal of becoming reenergized and reinspired around my scholarship and how my scholarship can continue to impact teaching and service at Sonoma State and in the community.