Accessing Experts in SBAE Laboratory Pedagogy

Kirby J. Schmidt
Oregon State University
108 Strand Agricultural Hall
Corvallis, OR 97331
541-737-2661
schmidki@oregonstate.edu

Josh Stewart
Oregon State University
130 Strand Agricultural Hall
Corvallis, OR 97331
541-737-2661
josh.stewart@oregonstate.edu

Introduction

The primary objectives of the Laboratory Pedagogy course at Oregon State University are to develop the practices related to managing and effectively facilitating learning among the diversity of contexts for learning in agricultural science education. Historically, the format of this course included weekly tours of school-based agricultural education (SBAE) programs across Oregon and local agricultural facilities on campus to strengthen networking. Pre-service teachers worked directly with the teaching or management faculty from each location to build social capital and answer questions about the teaching, safety, and management procedures, among many other curiosities. Building relationships is integral to social capital (Bourdieu, 1986), and these ties can facilitate academic collaboration in virtual settings (Daniels et al., 2003). Access to expertise is one source of social capital development for teachers, and this can often be mediated by location (Coburn & Russel, 2008). The abrupt transition to remote learning limited our access to SBAE expertise in laboratory settings and forced us to innovate.

How It Works

Phase 1: Recruitment

In order to connect learners (preservice teachers) with experts across SBAE in laboratory pedagogy, we set the goal of recruiting eight different programs to host virtual tours. Emails of inquiry were sent to SBAE leaders and programs from 12 different states detailing time commitment, proposed tour dates, and times. Potential participants were given a list of ideas of how time could be invested including facility tours, laboratory demonstrations, safety procedures, student management, success and setbacks managing laboratories, modifying laboratories, curriculum and resource sharing, and question and answer sessions.

Phase 2: Communication

Experts who showed interest in participating were followed up within one week and scheduled for a Zoom meeting so we could brainstorm ideas for the virtual tour, create an outline, determine technology needs, and secure a date. A complete review of the meeting was emailed to the expert following the meeting, and a schedule was created through Google Docs to keep track of correspondence. Zoom meeting invitations were sent to all experts one week prior to the interaction, and a reminder was sent to confirm 24 hours in advance of the meeting.

Phase 3: Tour Day

The Lab Pedagogy course is traditionally scheduled for three hours, and learners were provided with an overview of the planned day. The typical format started was a 60-minute tour with the expert followed by a 15-minute break. Forty-five minutes were scheduled for processing the experience and to encourage critical thinking about the key takeaways of the learners. The remainder of the class was spent planning a virtual lesson related to the context experienced.

Phase 4: Follow-Up

Thank you cards were mailed by the learners to the experts. An email was also sent to the expert by the instructor to show appreciation, gather interest for future participation, and any feedback from the experts about their experience connecting virtually. Students were also sent a short survey at the conclusion of the course to determine the effectiveness and needed changes.

Results

At the end of the fall term 2020, six virtual laboratory tours were successfully completed out of the originally planned eight. Constraints were observed due to differences in time zone and

bandwidth limitations. Unfortunately, this led to the attrition of the two planned tours: food science (in Texas), and biotechnology laboratory management (in Virginia). Laboratory tours were led by experts (n = 13) from five different states including California, Connecticut, Michigan, Minnesota, and New York. Experts were not limited to current SBAE teachers, although each had prior experience teaching SBAE. Experts from two-year and four-year institutions, as well as industry partners, were also included. Settings included a greenhouse, school farm, floral shop, animal land lab, and industrial technology shops.

Most students agreed the direct examples of projects and demonstrations showcased by the laboratory experts aided their development as teachers and learners. Additionally, the walk-throughs and innovative uses of each facility helped learners visualize their own future facilities. Lastly, and perhaps most importantly, learners reflected on how these interactions with experts led to the development of social capital. “It (the floral tour) showed me there is always someone you can reach out to for help” noted one learner.

Social capital was further emphasized by the learners when they participated in break-out rooms with a team of teachers from New York. The laboratory facilities and expertise areas of the staff from New York were incredibly diverse across plant and animal systems, and this program provided additional insight on teaching on a land laboratory in a metropolitan area. “You absolutely need to go back there”, shared a learner, because of the collegiality they experienced while learning more about the complexities of managing safety in a small animal laboratory. Most of our experts indicated a positive interest in future participation and noted the value of connecting with preservice teachers as beneficial.

Future Plans

As a result of the positive feedback gathered from both learners and experts, our intention is to continue with the implementation of virtual laboratory tours with some slight modifications. Our plan for Fall 2021 will leverage a hybrid of both virtual laboratory immersion as well as two full-day, in-person laboratory experiences for enhancing social capital and pedagogical skill development. In addition, our intention is to secure tours with laboratories related to natural resources systems (like school forests), food systems (kitchen laboratories), and SAE integration.

For those hoping to adopt this beyond your own state, we highly recommend connecting with either the National Association of Agricultural Educators or state-level associations for suggestions on programs to connect with. Who are the experts in your own state, and how could we increase the interactions between our preservice teachers and these experts by compiling a database? We utilized our existing network which included past experiences from building relationships at national conferences as well as inquiries with state-level leaders of both FFA and agricultural education.

Costs

No costs were directly incurred by the department throughout this activity. What cost savings might programs find if they too adopt virtual interactions like this? The main resources necessary are a video-conferencing platform (e.g. Zoom) with proper bandwidth, and experts to participate.

References

Bourdieu, P. (1986). The forms of capital. In Richardson, J. G. (Ed.) *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). Greenwood Press.

Coburn, C. E., & Russell, J. L. (2008). District Policy and Teachers' Social Networks. *Educational Evaluation and Policy Analysis*, *30*(3), 203–235. https://doi.org/10.3102/0162373708321829

Daniel, B., Schwier, R. A., & McCalla, G. (2003). Social capital in virtual learning communities and Distributed communities of practice. *Canadian Journal of Learning and Technology / La Revue Canadienne De l'Apprentissage Et De La Technologie*, *29*(3). https://doi.org/10.21432/t21s4r