Qualtrics Equips Teachers in Curriculum Quagmire

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Introduction & Need for Innovation

Curriculum planning is essential to the success of any school-based agricultural education (SBAE) program (Lunenburg, 2011; Talbert, Vaughn, Croom, & Lee, 2007). In fact, research suggests effective curriculum planning is related to increased efficiency and productivity within a classroom (Oliva, 2009). Within Michigan, curriculum planning takes on additional importance as it is connected to SBAE program funding (M. Forbush, personal communication, May 2017). Michigan agriculture, food, and natural resources (AFNR) education standards are concatenated into twelve *segments*, ranging from *Animal Anatomy and Physiology* to *Career Readiness and Leadership*. As students matriculate through courses in Michigan SBAE programs, they transition from program participants (passing coursework containing less than seven segments) to program concentrators (passing coursework containing between seven and 11 segments) to program completers (passing coursework containing all 12 segments). As students move up each level, the amount of program funding increases. Therefore, programs have been encouraged to develop first-year courses containing seven segments and second-year courses containing the remaining five segments. Given the complexity of curriculum planning (Lunenburg, 2011), however, some Michigan SBAE teachers have struggled to effectively plan their curriculum, leading to individual program funding cuts of up to $50,000 (M. Forbush, personal communication, May 2017).

The importance of curriculum planning in Michigan, and across the nation, is also apparent in the need for SBAE teachers planning learning experiences which illuminate core academic areas, such as science (McKim, Velez, Lambert, & Balschweid, 2017; Wilson & Curry Jr., 2011). A number of barriers to illuminating science within SBAE, including time to plan curriculum, have been identified (Warnick & Thompson, 2007). To address these barriers, SBAE leaders must think innovatively about methods to empower teachers to strengthen the science learning opportunities available throughout secondary school AFNR education curriculum.

Methods & How it Works

The Michigan AFNR Curriculum Planning Tool was originally developed by Michigan State University faculty in association with the Michigan Department of Education in 2016. Developed in Qualtrics, the first version included a step-by-step process for selecting segments and associated standards, including suggestions for a seven-segment first year course and five-segment second year course. As participants used the Qualtrics-enabled tool, segment and standard selections were recorded and a course report (i.e., course name, instructor name, segments and standards covered) was made available to users. Version one of the curriculum planning tool was presented to SBAE teachers in November 2016 at an annual professional development conference.

After version one, developers discovered an opportunity to enhance the curriculum planning tool by linking AFNR standards selected to the next generation science standards (NGSS). To link Michigan AFNR standards to NGSS, a group of 15 Michigan SBAE teachers convened in July 2017 to (a) align each Michigan AFNR standard to relevant NGSS and (b) describe a learning experience which would combine AFNR standards and NGSS. The work completed by teachers was built into the

curriculum planning tool by including associated NGSS and example learning experiences within the course report. Additionally, the developers added a function for the course report to be emailed to participants, allowing for easier storage. Version two of the tool was presented to early career Michigan SBAE teachers in July 2017 and all Michigan SBAE teachers in November 2017 at established professional developments.

Results to Date

Using Qualtrics allows developers to collect usage data. As of February 2019, the curriculum planning tool had been used 422 times since its inception. In Michigan, there have been an average of 115 SBAE teachers between 2016 and 2019. Importantly, the curriculum planning tool is designed to be used multiple times by a single teacher, with each use associated with a different course. Qualitative feedback retrieved from participants in professional development sessions include, "the segment and planning tool is a great organizational tool and having the NGSS in there is extremely useful," "I love the segment tool…it is even better now that it gives lesson ideas with the standards that are selected," and "makes understanding the segments and how learning objectives could be aligned with those objectives so much easier."

Significance

The Michigan AFNR Curriculum Planning Tool is significant because it empowers teachers to align program-level needs with state funding-related requirements. Further, the curriculum planning tool has significantly improved the funding of Michigan SBAE programs (M. Forbush, personal communication, May 2017). In addition, the curriculum planning tool empowers teachers to see opportunities for incorporating NGSS within their curriculum. Finally, teachers have reported utilizing the course reports, with NGSS linkages, to leverage AFNR courses for science credit.

Advice to Others

The Michigan AFNR Curriculum Planning Tool is specifically designed around the structure of program funding, segments, and standards in Michigan. While this structure is unique, other states may have similar systems linking standards-coverage with funding. Importantly, teachers in other states may share similar struggles and SBAE leaders within those states are, therefore, encouraged to explore the features of Qualtrics, or other online tools, in an effort to develop needs-based resources. Existing mindsets may suggest this is the role of the teacher; however, off-loading this responsibility can have significant impacts on the quality of AFNR education being offered and the relationship between SBAE leaders and teachers.

Costs

The primary cost associated with this innovation is the time spent by faculty, and SBAE teachers, to develop the tool. In total, faculty members have spent approximately 20 hours developing the tool. Additionally, 15 SBAE teachers contributed three hours of their time linking Michigan AFNR standards and NGSS, which Michigan Department of Education provided $2,000 to fund. Dissemination of the curriculum planning tool has been without direct cost, as presentations have occurred at established professional development sessions.

References

Lunenburg, F. C. (2011). Curriculum development: Inductive models. *Schooling, 2*(1), 1-8.

McKim, A. J., Velez, J. J., Lambert, M. D., & Balschweid, M. A. (2017). A philosophical review of science and society within agricultural education. *Journal of Agricultural Education, 58*(2), 98-110. doi:10.5032/jae.2017.02098

Oliva, P. F. (2009) *Developing the curriculum* (7th ed.). Boston, MA: Allyn and Bacon.

Talbert, B. A., Vaughn, R., Croom, D. B., & Lee, J. S. (2007). *Foundations of agricultural education* (2nd ed.). Danville, IL: Professional Educators Publications, Inc.

Warnick, B. K., & Thompson, G. W. (2007). Barriers, support, and collaboration: A comparison of science and agriculture teachers' perceptions regarding integration of science into the agricultural education curriculum. *Journal of Agricultural Education, 48*(1), 75-85. doi:10.5032/jae.2007.01075

Wilson, E. B., & Curry Jr., K. W. (2011). Outcomes of integrated agriscience processes: A synthesis of research. *Journal of Agricultural Education, 52*(3), 136-147. doi:10.5032/jae.2011.03136