Teaching Science, Technology, Engineering and Mathematics through Agriculture, Food and Natural Resources

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One out of four jobs in agriculture, food and natural resources (AFNR) are in science, technology, engineering and mathematics (STEM), yet the integration of AFNR and STEM education are typically conducted independently within their respective domains (e.g., agriculture education or science education). Teachers play an important role in helping students learn, and literature supports a consistent theme that preservice agriculture teachers lacked science knowledge to integrate science into their classes, and science teachers lacked agricultural knowledge to integrate agriculture into science classes. Traditionally, teaching methods courses are taught in isolation within specific domains or disciplines, and they do not teach preservice teachers how to teach using interdisciplinary or integrated approaches by mixing domains such as agriculture and science. Although the integration of science and agriculture has been studied by many researchers in agricultural education, few researchers have studied how STEM can be taught using an integrated and interdisciplinary approach through agriculture, food and natural resources. As such, a new graduate course was developed and taught to help preservice youth educators in a college of agriculture learn how to teach STEM through AFNR. Preservice youth educators planned an integrated lesson and delivered it to fifth grade students in an afterschool program. Preservice youth educators reflected on their teaching and learning experiences and shared their personal schemas of integrating STEM through FANR. Preservice youth educators described their experiences were engaging, meaningful, and motivating; yet, they experienced challenges of delivering integrated learning experiences within the time constraints of the afterschool program.