Successful Teaching Methods for Middle School Agricultural Education in Kansas

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Introduction/Literature Review

Middle schools are unique entities that must be recognized independently from secondary and elementary school because of the nature of their students (Golden et al., 2014). The age range varies, but most define middle school as students in grades six through eight (Jones et al., 2020). Students in this age range are growing and changing in many areas. This is a time when young adolescents are developing their thinking and social skills (Kansky, 2021). These changes impact how they learn and how teachers should teach them. The Association for Middle Level Education (2020) recommends challenging and exploratory curriculum with a focus on active and purposeful instructional activities.

Middle school agricultural education (MSAE) continues to grow and develop (Jones et al., 2020) across the United States. The number of students in middle school programs has grown from 52,968 students in 1992 (Rossetti, 1992) to more than 107,856 students in 2020 (Jones et al., 2020). Although many teachers enjoy teaching middle school students, there is little middle level education instruction required of preservice agricultural education instructors (Jones et al., 2020). This study focused on the teaching strategies of MSAE teachers to identify best practices and make recommendations for future improvements.

Theoretical Framework

Piaget's cognitive development theory (1952) served as the theoretical framework for this study with focus on two stages of development. Learners in the concrete operational stage are developing logic but will still struggle with abstract concepts (Cherry, 2022). The formal operational stage includes adolescence and adulthood with a focus on the ability to think in a more abstract and hypothetical manner (Cherry, 2022). Teachers must help their students transition from the concrete operational stage to formal operational (Brown & Canniff, 2007).

Purpose and Objectives

The purpose of this study was to identify successful methods when teaching middle school agricultural education (MSAE) students. Three research questions guided this study: 1.) What are the instructional strategies teachers use when teaching their MSAE classes?; 2.) What resources and training do MSAE teachers utilize?; 3.) How is instruction different between high school and middle school students?

Methods

A recruitment email was sent to the Kansas agriculture teacher listserv with ten participants agreeing to participate (only nine completed the interview). The participants' teaching experiences ranged from first-year teachers to a veteran teacher (33 years). Participants' MSAE teaching experience ranged from one year to 14 years. Interviews lasted an average of 30 minutes and were recorded on a password protected computer for later transcription. Participants responded to several questions about their agricultural education program and their middle school courses. The website otter.ai was used to help transcribe each interview. Transcriptions were compared to notes and pseudonyms were assigned to each participant to protect their identity. Participant responses were coded and analyzed to define common themes (Taylor et al., 2015). During this process, constant comparisons were made to group common themes together for each research question. Glaser (1967) states the purpose of the constant comparative method

is to generate theory more systematically than just analysis. Efforts were made to establish research rigor (Taylor et al., 2015).

Results

Theme 1: Instructional strategies

The first theme that emerged from the data focused on successful teaching strategies for middle school age students. Examples of the methods included: hands-on activities, inquiry-based learning, games, research projects, group projects, discussion-based, student-led presentations, reading strategies, repeating instructions, videos, E-moments, and brain-dumping. Teachers spoke to the need to diversify their methods during each lesson, "I try to change things up throughout the class period, the first part will be some kind of hands-on activity and then we move to something else like Kahoots or project-based learning. Sometimes it is discovery, throwing something out there and they have to figure it out."

Theme 2: Resources and training

Most teachers expressed the need for more hands-on and activity-based curriculum. Many of the teachers said that they utilize ideas or lessons from multiple different premade curriculums and professional development trainings. Examples: Journey 2050, One Less Thing, CDE materials, Pork Checkoff, MSAE Identification List, CASE AgX and AFNR, Kansas Corn Seed to STEM, Ag Ed Discussion Lab, Germinate and Nutrients for Life. Many teachers used whatever they could find, "Begged, borrowed and stole from everybody. I just follow the guidelines that are set forward by the state."

Theme 3: Differences between middle school and high school students

Teachers identified several differences between the two groups, one teacher said, "Keeping their attention is different. And that is why I change the instructional strategies five to eight times a (class) period…they just have to be moving all of the time." Teachers also mentioned that middle school students like to talk during class, they ask many questions, and need instructions repeated. One teacher also spoke to using students to help teach their peers, "If I have students with that agriculture background, I try to pair them or group them with those students who do not have that agriculture background. As they are sitting at the table discussing something, they have input from a fellow student who does have that background."

Conclusions/Recommendations

Successful teaching of middle school students is accomplished when appropriate instructional strategies are used, when teachers participate in professional development focused on middle-level students in agriculture, and when teachers acknowledge middle school students are developmentally different from high school students (Kansky, 2021; Piaget, 1952; Rappa, 2011) and act upon this knowledge.

Recommendations for practice include more inservice and preservice teacher training, promotion of existing curriculum, developing new curricular resources to meet this unique group of learners (Jones et al., 2020; Rayfield & Croom, 2010), and distribution of a "tip-sheet" to assist current and future agricultural educators successfully teach this specific age group. Research on effective middle school teaching methods, preservice training to teach middle level learners, middle school agriculture programs, and middle school agricultural education students should be done as we continue to increase the number of programs across the nation (Jones et al, 2020).

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