

Influence of the CASE Curriculum on Agriculture Teachers' Use of Inquiry-Based Methods Through Science Integration

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Nine currently certified CASE teachers were interviewed, observed, and had lesson plan documents analyzed to capture how they were utilizing the CASE curriculum and integrating inquiry-based methods into the classroom through science integration. The findings were then coded by the researcher using an inquiry-based learning and a planned behavior change framework that revealed five major themes that served as the key findings for this study.

Key Findings

1. Barriers to Implementation that Affected Teacher Behavior

Two barriers that were prevalent in a majority of the participants were the lesson and curriculum planning process and access to materials and capital supplies. These perceived barriers affected the teacher's ability to integrate effective inquiry-based strategies into the classroom. This echoes past research findings of equipment and supplies being vital for successful implementation of the CASE curriculum (Lambert, Velez, & Elliot, 2014; Carroway, 2015) as well as course planning being a known obstacle for teachers that can hinder preparation for each unit and individual lesson (Stradley & Smith, 2017). Following any CASE institute, it is crucial for teachers to figure out how this curriculum will work in their set curriculum map which will lead to efficient lesson planning.

2. Experience in Industry Professions Lead to Increased Teacher Efficacy for Inquiry-Based Strategies

Six of nine participants were previously employed in other careers within the agriculture industry prior to entering the classroom. Those with industry experience were able to develop a stronger felt need to learn and inquiry in their students with the content being taught. In addition, there was a higher value in developing problem solving and critical thinking skills.

3. Traditionally Certified Teachers More Likely to Fall Back on Didactic Teaching Orientations

Didactic orientations of teaching is the general relay of information through lecture and discussion where

students are accountable for testing through factual information. Traditionally certified teachers had a more difficult time with the transition to inquiry orientations due to the "lack of control" in the classroom and the possibility of getting the wrong answer. One teacher said to students during an observation- "Do not do it that way... You will set it up wrong and it will not work correctly." Instead of allowing students to go through the problem-solving process, the teacher was primarily focused on the correct product being achieved.

4. Disconnect Between Student Capacity and CASE Expectations of Inquiry-Based Methods

Maturity in students, as well as their experiences in other classes, presented pushback on the teachers trying to incorporate inquiry-based learning. One participant explained students describe their ag class as difficult and would ask, "Why can't we just do a worksheet? Why can't we just watch a video?" Another participant explained, "You can't just skim by with CASE, you have to do the work."

5. In-State Training and Networking Support System Played a Vital Role in Teachers' Perceptions of CASE Institute

Each participant unanimously agreed that the collaboration and partnerships developed with other participants from the same state fostered the desire and drive to adopt the behavior of incorporating inquiry-based methods into their classroom.

Recommendation for Practice

This study recommends more:

- Increased collaboration sessions planned by the state CASE leaders for CASE teachers in their respective state
- Development for state online platform available to all teachers to include access to material purchasing manuals, contact information for state CASE leaders, and opportunities for implementation grants.
- Increased opportunities for financial and resource support for currently certified CASE teachers and teachers who are interested in achieving CASE certification.

