The purpose of this study was to determine South Western agriculture teacher's mathematical content knowledge. Mathematics and science are both essential to the field of agriculture; however, while science curriculum is currently integrated in many high school agricultural education classrooms, mathematics coverage is limited (Stubbs & Myers, 2015). The opportunity for students to engage in real world applications of mathematical content through school-based agricultural education programs exists, but if teachers do not possess the content knowledge necessary to teach mathematics, students are then left at a disadvantage. Therefore, the objectives of this study were to describe agriculture teachers perceived mathematical content knowledge, actual mathematical content knowledge, and the relationship between perceived and actual mathematical content knowledge for South Western agriculture teachers.

The Content Knowledge Framework was utilized in determining agriculture teacher's content knowledge for the subject area of mathematics (Even, 1990).
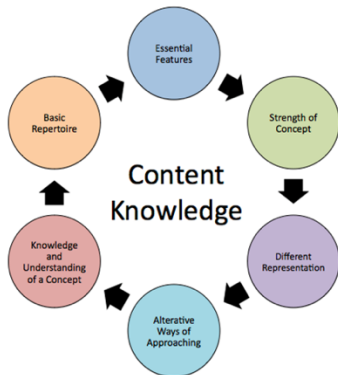


*Figure 1.* Content Knowledge Framework (Even, 1990)

Perceived ability was established through eight statements which had been aligned with components of the CK Framework.

- Essential Features
  – *"I can explain the basic definition for this concept"*
- Strength of Concept
  – *"I can identify subtopics related to this concept"*

- Different Representations
  – *"I can describe multiple representations of this concept"*
  – *"I can connect multiple representations of the concept to one another"*
- Alternative Ways of Approaching
  – *"I can choose the best approach to solve a problem related to this concept"*
- Knowledge and Understanding of a concept
  – *"I can use procedural knowledge to solve a problem related to this concept"*
  – *"I can link this concept to other concepts within and beyond the unit"*
- Basic Repertoire
  – *"I can identify effective examples for teaching this concept"*

Actual mathematical ability was established through ten multiple-choice math questions from the *Mathematics Ability Test* (Stripling & Roberts, 2012).
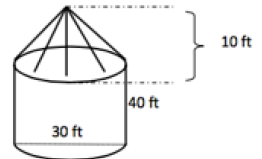


*Figure 2.* Mathematics Ability Test (Stripling et al., 2012)

A quantitative analysis of 24 usable data respondents revealed South Western agriculture teachers perceived their average mathematical ability as being at a moderate level, while their average actual mathematical ability was 44%. The analysis also revealed a negative correlation to teachers' perceived ability and years spent teaching and a positive correlation between teachers' actual ability and years teaching.

It is recommended that mathematics requirements at the agricultural teacher preparation level be reexamined. Additionally, professional development for South Western agriculture teachers in various mathematics content is encouraged.

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