

Does the Quantity of Agricultural Mechanics  
Training Received At The Secondary Level  
Impact Teacher Perceived Importance of  
Agricultural Mechanics Skills?

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# Introduction

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- Nearly 90% of current agricultural education instructors within the state had taught an agricultural mechanics course.
- Secondary agricultural education programs in Iowa have local control.
- What factors influence an agricultural mechanics instructor's decision to determine what should be taught in their program?

# Introduction

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- Many of the top needs for teacher in-service were in the area of agricultural mechanics.
- Agricultural Education teachers indicated 54 mechanics skills that were appropriate for secondary agricultural mechanics courses.
- Teachers are not always adequately prepared or comfortable teaching those skills.

# Introduction

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- As times change, the need for schools and teacher education programs to evaluate their curricula will increase.
- Other than knowledge gained through pre-service education or in-service education programs, most agricultural mechanics teachers have experienced those courses while they were secondary students.
- Knowledge influences values and beliefs.
- Does the amount of training teachers received while they were secondary students effect their current beliefs?

# Conceptual Framework

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- Constructivism is a learning paradigm in which learning is a process that builds knowledge from experiences.
- Vygotsky's social development theory.
- Vygotsky (1978) indicated that “every function in the child's cultural development appears twice; first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)”

# Purpose

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- Describe the perceptions of secondary agricultural education teachers concerning personal perceptions of importance to teach selected agricultural mechanics skills based on the quantity of agricultural mechanics training received at the secondary level.

# Objectives

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- Describe teachers' perceived level of importance of agricultural mechanics skills in teaching agricultural education at the secondary level.
- Describe the quantity of agricultural mechanics training completed by Iowa agricultural education teachers as secondary students.
- Describe the relationship between teacher perceived importance and the quantity of agricultural mechanics training received at the secondary level.

# Methods

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- This descriptive study used survey research methods to summarize characteristics, attitudes, and opinions to accurately describe a norm.
- Data were collected through a census study conducted during the Iowa agricultural education teachers' conference.
- Data were analyzed by using non-parametric statistics, more specifically Pearson's  $\chi^2$  test.

# Results

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- 32 of the 54 skills taught in secondary schools had a significant relationship.
  - 13 out of 19 mechanics training skills
  - 8 out of 9 construction skills
  - 3 out of 6 electrical skills
  - 7 out of 15 power and machinery skills
  - 1 out of 5 soil and water training skills

# Results

Table 1  
*Spearman Rho Correlational Relationships between the Quantity of Agricultural Mechanics Training and Skills Received at the Secondary Level and Teachers Perceived Importance*

Skill Area	<i>n</i>	Spearman Rho Correlation
Woodworking Power Tools	91	.473**
Oxy-acetylene Brazing	91	.437**
Legal Land Descriptions	83	.429**
Small Engine Services - 2 Cycle	83	.340**
Wiring Skills (Switches & Outlets)	89	.320**

*Note.* \*\* $p < .05$

# Conclusions

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- Skills with the highest correlation are skills that were heavily used in industry in decades prior to today and are still in significant use today.
- The content teachers were exposed to in the social setting (as students), has reemerged intrapsychologically today in their teaching.

# Implications and Recommendations

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- Current teachers have developed their current perceptions on what is important to teach in part due to what they were taught on the social level as secondary students.
- Post-secondary teacher educators and industry should continue to help beginning teachers receive additional training and support in agricultural mechanics at the local level.

# Implications and Recommendations

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- Teachers will need to be focused on teaching what they think is the most important to their students success.
- Pre-service institutions will need to work closely with industry leaders
- Workshops and other forms of professional development are vital.