

IDENTIFYING THE AMOUNT OF POST-SECONDARY ELECTRICAL TRAINING RECEIVED BY SCHOOL-BASED AGRICULTURAL EDUCATION TEACHERS

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INTRODUCTION

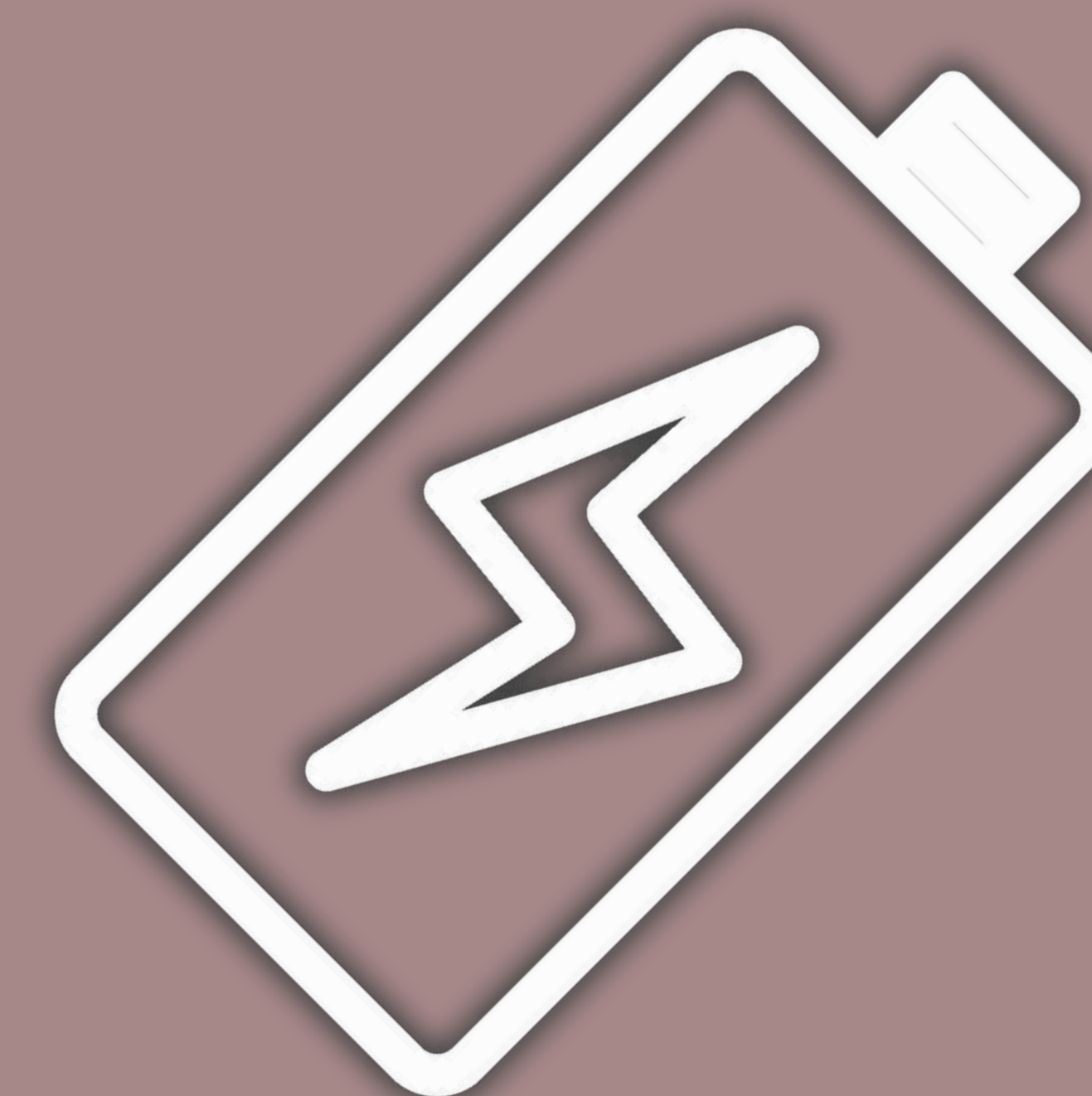
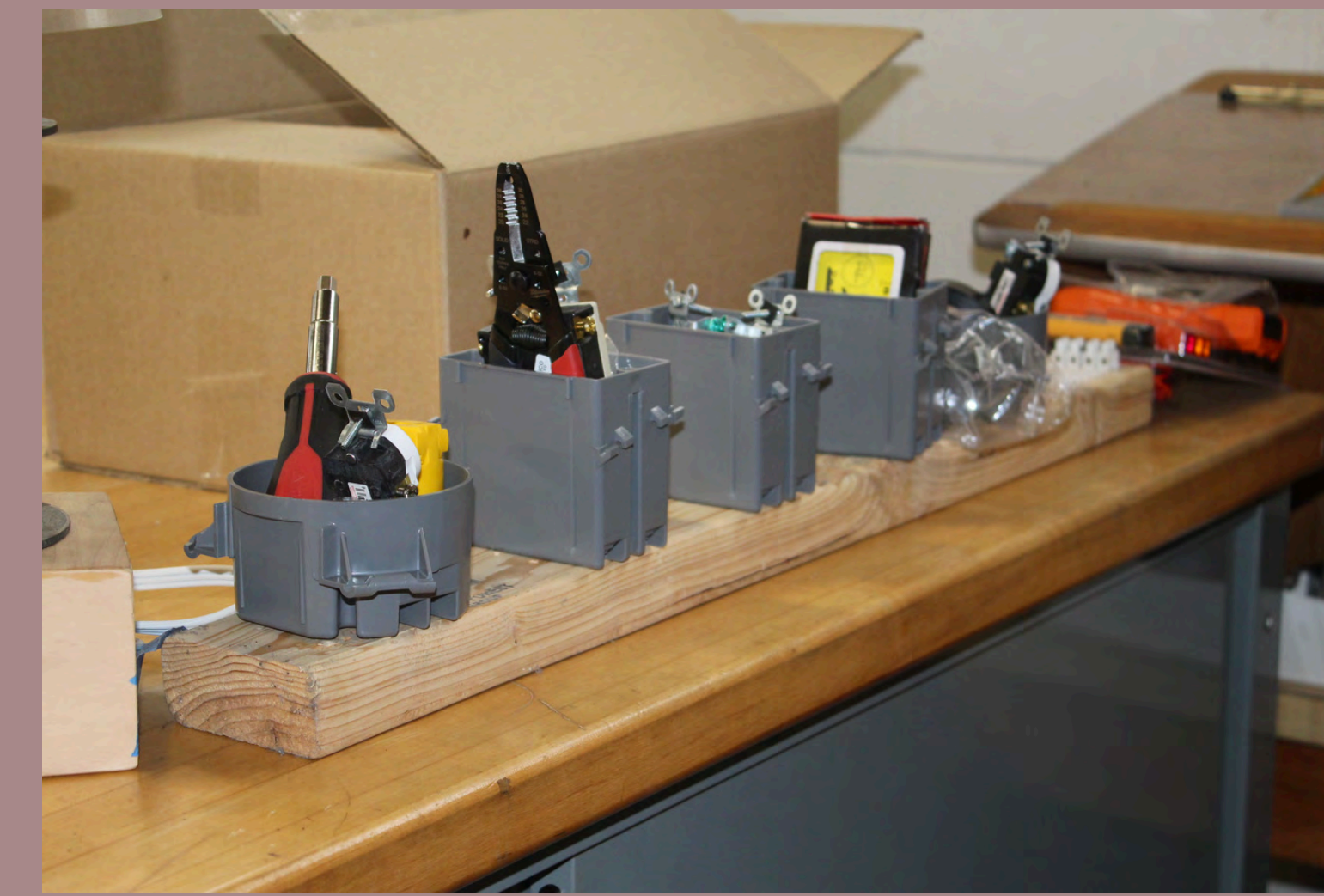
- SBAE PREPARES STUDENTS THROUGH HANDS-ON, TECHNICAL INSTRUCTION.
- AGRICULTURAL MECHANICS INCLUDES WELDING, CONSTRUCTION, POWER SYSTEMS, AND ELECTRICITY.
- ELECTRICITY IS OFTEN UNDEREMPHASIZED IN TEACHER PREP PROGRAMS.
- MANY SBAE TEACHERS LACK COURSEWORK IN ELECTRICITY, REDUCING CONFIDENCE AND SAFETY.
- GROWING RELIANCE ON ELECTRICAL SYSTEMS IN AGRICULTURE INCREASES THIS TRAINING NEED.

PURPOSE/OBJECTIVES

- PURPOSE: EXAMINE SBAE TEACHERS' POSTSECONDARY COURSEWORK IN ELECTRICITY.
- OBJECTIVES:
- COURSEWORK IN ELECTRICAL SAFETY & TOOL USE.
- COURSEWORK IN SWITCHES & RECEPTACLES.
- COURSEWORK IN MAKING ELECTRICAL CONNECTIONS.
- COURSEWORK IN ELECTRICAL TESTING PROCEDURES.

THEORETICAL/ CONCEPTUAL FRAMEWORK

- HUMAN CAPITAL THEORY: EDUCATION IS AN INVESTMENT THAT INCREASES LONG-TERM PRODUCTIVITY.
- TECHNICAL TRAINING IN ELECTRICITY IMPROVES TEACHER EFFECTIVENESS AND WORKFORCE READINESS.
- AGRICULTURE TEACHER EDUCATION & INDUSTRY PARTNERSHIP MODEL (WELLS ET AL., 2021):
- CONNECTS TEACHER PREP PROGRAMS WITH INDUSTRY PARTNERS.
- ENSURES TEACHERS REMAIN CURRENT WITH EVOLVING TECHNOLOGIES.



METHODS

- DATA FROM 80 SBAE TEACHERS AT A 10-DAY WORKSHOP (2021-2024).
- WORKSHOP COVERED: ENGINES, WELDING, CUTTING, AND 1.5 DAYS OF ELECTRICITY.
- TEACHERS COMPLETED PRE/POST ASSESSMENTS (28 ELECTRICAL SKILLS).
- COURSEWORK AMOUNT RATED ON 5-POINT LIKERT SCALE.
- VALIDITY ENSURED BY EXPERT REVIEW; CRONBACH'S ALPHA SHOWED STRONG RELIABILITY.

RESULTS

Electrical Construct	M	SD
Electrical Safety and Tools	1.45	0.8
Switches and Receptacles	1.39	0.76
Making Electrical Connections	1.36	0.77
Electrical Testing	1.3	0.72

NOTE. SCALE: 1 = NONE/VERY POOR; 2 = LITTLE; 3 = GOOD; 4 = ABOVE AVERAGE; 5 = EXCELLENT

CONCLUSIONS/ RECOMMENDATIONS

- SBAE TEACHERS REPORT MINIMAL TRAINING IN AGRICULTURAL MECHANICS AND ELECTRICITY.
- LACK OF PREPARATION POSES SAFETY AND INSTRUCTIONAL CHALLENGES.
- MORE STRUCTURED COURSEWORK + HANDS-ON EXPERIENCES NEEDED IN TEACHER EDUCATION.
- PROFESSIONAL DEVELOPMENT LIKE WORKSHOP HELPS FILL GAPS.
- RECOMMENDATION: EXPAND IN-SERVICE TRAINING, REGIONAL PROGRAMS, AND INCENTIVES.
- LONG-TERM NEED: STUDY HOW TRAINING IMPACTS CLASSROOM TEACHING AND STUDENT OUTCOMES.