

**Paige Seitz**

1st Place – Agriculture and Life Sciences Division

2023 Texas Student Research Week Abstract

**Utilizing Andragogy to Develop Extension Employees' Sustainable Agriculture  
Competencies**

Cotton is a chemically intensive commodity, which negatively impacts the environment and health of rural citizens. Improvement in environmental stewardship of cotton would contribute to the long-term sustainability of agriculture in cotton producing regions globally. Extension personnel provide farmer education to improve these issues, but their proficiency to foster adoption of sustainable farming practices is unknown. A 48-item survey was administered to agricultural extension personnel in five states to gain an understanding of extension professionals' current knowledge in sustainable cotton production and identify pertinent training needs to address in professional development programs. A ranked discrepancy model indicated a glaring need for training in all evaluated competencies to improve sustainability in cotton producing areas. The Adult Learning Theory outlines four principles through which effective educational curricula can be developed specifically for adult learners. Utilizing these principles, asynchronous online trainings will be developed for change agents to better serve the needs of rural cotton producers. Development of engaging content oriented to agents' specific needs is key to increasing successful dissemination and implementation of sustainable production practices to address UN Sustainable Development Goal 2, which includes promotion of sustainable agriculture.

## References

- Knowles, M. S. (1984). *The adult learner: A neglected species*. (3rd ed.). Gulf Publishing Co.
- Knowles, M. S., Holton, E. F., & Swanson, R. A. (1998). *The adult learner: The definitive classic in adult education and human resources development*. (5th ed.). Gulf Publishing Co.
- Lindeman, E. C. (1926). *The meaning of adult education*. New Republic.
- Narine, L., & Harder, A. (2021). Comparing the Borich model with the Ranked Discrepancy Model for competency assessment: A novel approach. *Advancements in Agricultural Development*, 2(3), 96–111. <https://doi.org/10.37433/aad.v2i3.169>
- Seitz, P., Strong, R., Hague, S., & Murphrey, T. P. (2022). Evaluating agricultural extension agent's sustainable cotton land production competencies: Subject matter discrepancies restricting farmers' information adoption. *Land*, 11(11), 2075. <https://doi.org/10.3390/land11112075>
- United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. <https://sdgs.un.org/2030agenda>
- United States Department of Agriculture National Agricultural Library. (n. d.). Sustainable agriculture. <https://www.nal.usda.gov/farms-and-agricultural-production-systems/sustainable-agriculture>