



UNIVERSITY OF GEORGIA

College of Agricultural & Environmental Sciences

# A Study on Preservice Teachers' Self-Efficacy and Challenges in Greenhouse Management

Maria R. Helm , Nicholas E. Fuhrman & Jason B. Peake

The University of Georgia  
**WARNELL**  
SCHOOL OF FORESTRY & NATURAL RESOURCES

GEORGIA  
**ALEC**



## Introduction

Sustainable agriculture and food systems education have emerged in response to challenges posed by industrial agrifood systems, according to UNESCO (2017).

Sustainable education builds learners' self-efficacy to make responsible decisions for the environment, economy, and society, benefiting present and future generations. (Kioupi & Voulvoulis, 2019; Kopnina, 2020)

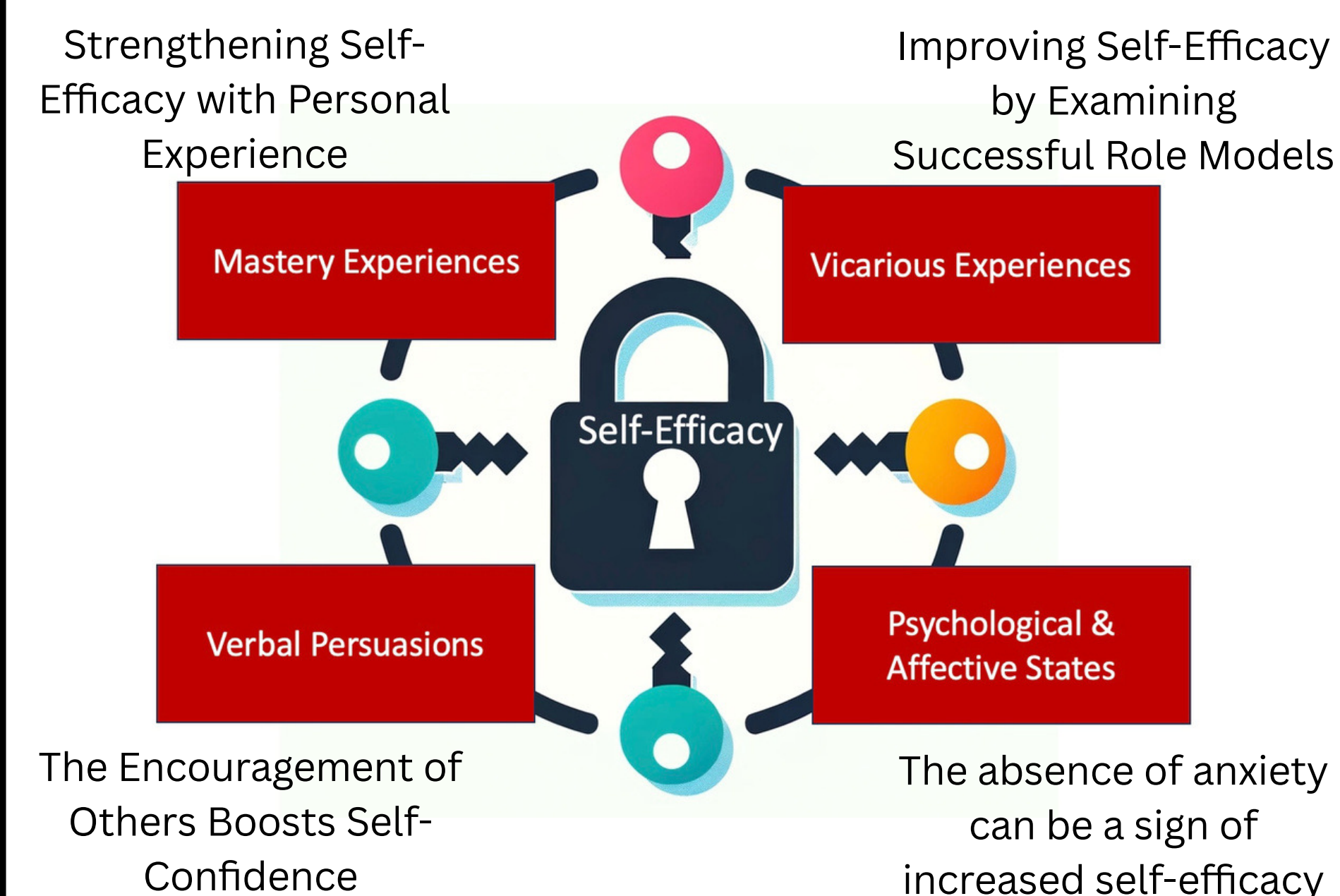


Increased self-efficacy can lead to better teaching, resulting in environmentally aware and skilled students (Sökmen, 2019).

Despite the fact that approximately 90 % of high schools are equipped with greenhouses, a study found that only 46.7% of surveyed US agricultural education institutions require a greenhouse management course, indicating a significant absence in crucial curriculum offerings. (Sanders et al., 2023)

## Theoretical Framework

The Four Sources of Self-Efficacy According to Bandura (1977)



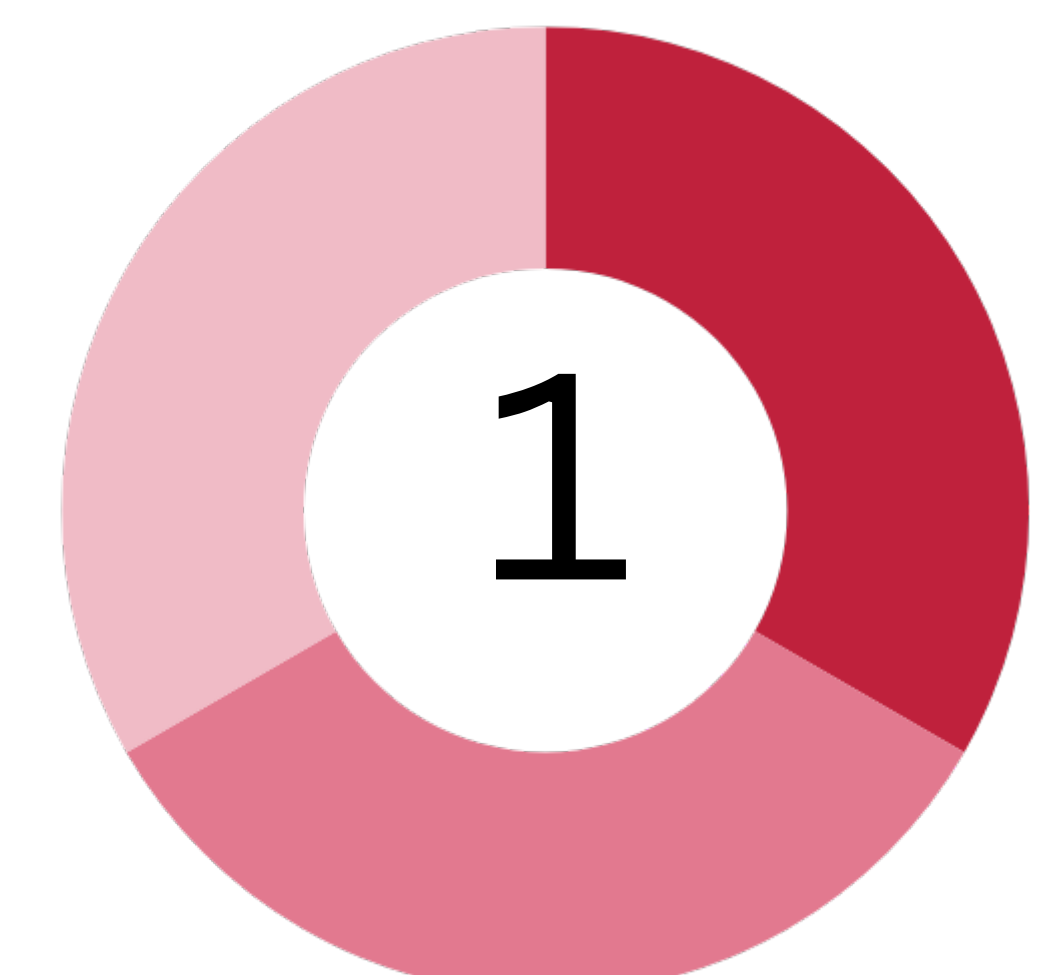
## Methods

Phenomenological Qualitative Study



## Themes

The Significance of Hands-on Experience



The Significance of Teamwork and Communication

The Discovery of Passion and the Therapeutic Value



## Study Objectives



1. To explore the experiences of pre-service agriculture teachers within a greenhouse management class.
2. To identify the challenges pre-service agriculture teachers face in greenhouse management class.

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## Results

2

"...half the time, when we would talk about something in class, I would not fully understand what we were talking about until I went out to the greenhouse and did it myself." - shared P3

"I used to lack knowledge about greenhouses, but now I feel self-assured thanks to our classroom conversations." - remarked P5

"one of the biggest things I enjoyed, and will continue to think about and share with others, is just how relaxing planting plants is." - reflected P2



Themes

"I was kind of ignorant to the whole subject in general. How different plants respond to various conditions and the critical role of temperature." - expressed P1

"I didn't know like you can grow plants without soil and all that." -admitted P4

"At first, I thought this greenhouse class was just going to be about basic planting, but it totally changed the way I see nature and our role in it. Watching those plants grow and thrive, it's like our own learning... it's been way more enlightening than I ever expected." - stated P8

## Take Aways



Greenhouse management should be introduced in the first year of environmental and agricultural courses to develop practical skills, self-efficacy, and preparedness for future sustainable initiatives.



In-depth research is required to identify the most effective curricular strategies that can enhance students' self-efficacy and embed sustainable development principles within their educational experience.



Universities should establish inter-departmental synergies and use experiential learning methods to promote sustainability and environmental consciousness across different academic disciplines.

## References

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Sanders, K., Smalley, S., & Hainline, M. (2023). Evaluating the preparation of pre-service school-based agricultural education teachers in laboratory-based courses. *Journal of Agricultural Education*, 64(2), 11–29. <https://doi.org/10.5032/jae.v64i2.71>

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