

Global Agricultural Immersion as Professional Development for Agricultural Educators

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Introduction/Need for Research

Agricultural education is increasingly situated within a global system shaped by diverse production practices, food systems, markets, and cultures (Roberts et al., 2016; Sorensen et al., 2024). Consequently, agricultural educators require professional learning opportunities that develop disciplinary knowledge and global perspectives to prepare students for an interconnected agricultural industry. Research consistently suggests professional development is most effective when it is content-focused, active, collaborative, and connected to teachers' instructional practice (Darling-Hammond et al., 2017; Desimone, 2009). Although global agricultural immersion experiences have been associated with professional growth and instructional change (Alfaro & Quezada, 2010), little research has examined which dimensions of teacher professional learning are fostered through agriculture-specific global immersion experiences. Therefore, the purpose of this study was to examine teacher professional learning outcomes associated with participation in the Puerto Rican Education and Exploration Program (PRE²P).

Conceptual or Theoretical Framework

This study was guided by Desimone's (2009) conceptual framework for effective professional development. The framework identifies content focus, active learning, coherence, duration, and collective participation as core features of effective professional learning. It further proposes that these features influence teachers' knowledge, beliefs, and instructional practice. PRE²P incorporated agriculture-specific content, field-based learning, collaborative participation, and reflection; therefore, the framework guided interpretation of participants' disciplinary knowledge, instructional capacity, professional perspectives, and intended classroom application.

Methodology

A sequential mixed-methods program evaluation examined post-program survey and interview data from the 2024 and 2025 PRE²P cohorts. Anonymous quantitative surveys were collected following each program cohort (2024, $n = 12$; 2025, $n = 5$). Semi-structured qualitative interviews were subsequently conducted with program participants (2024, $n = 16$; 2025, $n = 7$); because survey responses were anonymous, survey and interview data could not be linked at the individual participant level. Participants completed a week-long agricultural immersion experience that included agricultural production tours, cultural excursions, university visits, interactions with producers and educators, and collaborative learning opportunities. Survey data were analyzed descriptively by cohort using frequencies, percentages, and means because response scales differed across years. Interview data were analyzed thematically to identify recurring perceptions of professional learning. Quantitative and qualitative findings were then compared at the cohort level to identify converging and complementary evidence related to disciplinary knowledge, instructional capacity, professional perspectives, and intended classroom application. Desimone's (2009) framework guided interpretation of how agriculture-specific content, active field-based learning, collaborative participation, and reflection related to participants' reported professional learning.

Results/Findings

Four dimensions of teacher professional learning emerged across both cohorts: disciplinary knowledge, instructional capacity, professional perspectives, and intended classroom application.

Participants reported substantial gains in disciplinary knowledge. Among the 2024 cohort (3-point knowledge-gain scale), tropical agriculture received the highest rating ($M = 3.00$), followed by sustainability and agriculture in general ($M = 2.83$). Qualitative responses identified farm tours, tropical agriculture, rainforest ecosystems, and interactions with producers as the most meaningful learning experiences.

Participants also demonstrated increased instructional capacity. Among 2024 respondents (5-point agreement scale), participants reported an increased desire to teach agriculture from a global perspective ($M = 4.83$), while 75% were *extremely likely* and 25% were *likely* to implement what they learned. Similarly, 2025 participants (6-point agreement scale) agreed the experience expanded teaching resources ($M = 5.60$) and would influence future classroom practice ($M = 5.80$).

Participants also described broader professional perspectives, including greater cultural appreciation, renewed motivation to teach, strengthened professional identity, and an enhanced understanding of agriculture as a global enterprise. Appreciation for other cultures and understanding agricultural issues from multiple perspectives received the highest ratings among the 2024 cohort ($M = 4.92$), while 2025 participants reported the experience positively impacted them personally and professionally ($M = 6.00$).

Finally, participants expressed strong intentions for classroom application by describing plans to integrate global agricultural examples, cultural experiences, and producer interactions into future instruction. Across both cohorts, authentic collaboration with agricultural producers, Puerto Rican educators, university faculty, and fellow participants was consistently identified as a primary contributor to professional learning.

Conclusions

Participation in PRE²P was associated with increased disciplinary knowledge, instructional capacity, professional perspectives, and intended classroom application across two program cohorts. Findings suggest that global agricultural immersion experiences may foster professional learning through authentic agricultural contexts, collaborative reflection, and culturally immersive experiences. These findings align with Desimone's (2009) framework, which emphasizes active, content-focused, collaborative learning connected to teachers' professional practice, and with research suggesting that international professional development can support teachers' professional growth and instructional reflection (Alfaro & Quezada, 2010).

Implications/Recommendations/Impact on Profession

Global agricultural immersion experiences represent a promising model for agricultural teacher professional development because they integrate content-focused learning, authentic agricultural contexts, collaborative reflection, cultural immersion, and experiential instruction

within a single professional learning experience. Agricultural teacher educators, state leaders, and professional organizations should consider incorporating these elements into future professional development while intentionally providing opportunities for educator collaboration and structured reflection to facilitate classroom application. Future research should examine whether reported intentions translate into sustained instructional practice and improved student understanding of global agricultural systems.

References

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