

Examining the Teacher Pipeline

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Introduction

In California, secondary agriculture programs exhibit a demographic spread of 49% Male, 44% Female, 26% White, and 46% Hispanic (AET, 2023). However, the demographics of the current agricultural teacher population contrast sharply, with figures revealing 64% Female, 78% White, and only 18% Hispanic (Foster et.al., 2023). Of note is the composition of program completers, who are predominantly 75% Female and 81% White, especially when they fill 85% of new teaching positions. This study aims to descriptively compare the demographic "pipeline" across the three major agricultural teacher preparation institutions in California. Collectively, these institutions account for over 85% of the state's program completers. While each adheres to the same state credentialing standards and situates their agricultural education in a college of agriculture, variations exist in their sizes, entry requirements, and campus types. Our primary focus is to present a clear picture of the demographic journey from student enrollment to program completion.

Conceptual Framework

The scarcity of research on demographic disparity in the secondary agriculture teacher pipeline necessitates our study, which is grounded on key existing literature. Cherng and Halpin (2016) advocate for teacher diversity, finding that students across all groups had more favorable perceptions of minority teachers, implying the need for diversity in the teacher pipeline. Egalite, Kisida, and Winters (2015) similarly found benefits, especially in low-performing students, from having a race-congruent teacher. Nonetheless, obstacles persist for underrepresented students. Bullock, Morgan, and Warner (2021) noted challenges like financial burden and feelings of isolation. Creighton (2007) emphasized non-academic factors influencing student attrition, such as community integration and financial support. Walpole (2003) outlined the uphill battle for students from low socioeconomic status (SES) backgrounds in achieving a comparable social or economic standing to high SES peers. These studies offer a lens to scrutinize the lack of diversity within the secondary agriculture teacher pipeline. Our study intends to investigate the current disparity between program enrollment and program completion in underrepresented groups.

Methodology

Utilizing a descriptive comparative design, this study evaluates the demographic composition of agricultural education majors, program completers, and students in secondary agricultural education programs across three key public universities in California. The intent is to examine the teacher pipeline and contrast institutional demographics with state averages.

Institutional data was extracted from a system wide dashboard (CSU, 2023). Program completer data was extracted from the AAAE National Supply and Demand Study (Foster et.al., 2023). Secondary student data was extracted from Agricultural Experience Tracker (2023). Statewide data was extracted from National Center for Educational Statistics (NCES) for grades 9-12 (NCES, 2023). Data analysis was conducted in Microsoft Excel, focusing on descriptive statistics and demographic frequency distributions.

Results

Secondary programs continue to become more diverse, and the agriculture programs follow this trend, but lag in numbers (Table 1). While the focus of the study was race, gender parity is also important. In broad terms women are overrepresented in all the colleges and preparatory majors. (Table 2). The pipeline becomes more female moving toward program completers.

At two of the three colleges Hispanic students exceed White students (Table 3). White students in the majors exceed the number of Hispanic students in two of the three institutions. In all cases program completers are overwhelmingly White. Significant differences exist between the institutions at all levels along the pipeline until the program completer group.

Table 1 – Secondary Agricultural Programs

	Gender		Race	
	Female	Male	White	Hispanic
Secondary Ag Programs	44%	49%	26%	46%
Statewide (grades 9-12)	49%	51%	22%	56%

Table 2 – Gender

	Institution 1		Institution 2		Institution 3	
	Female	Male	Female	Male	Female	Male
University	49%	51%	55%	45%	60%	40%
College of Ag	61%	38%	67%	33%	57%	43%
Ag Ed Major	56%	44%	73%	27%	76%	24%
Program Completers	70%	30%	85%	15%	71%	29%

Table 3 – Race*

	Institution 1		Institution 2		Institution 3	
	White	Hispanic	White	Hispanic	White	Hispanic
University	51%	21%	44%	36%	17%	57%
College of Ag	59%	23%	39%	47%	28%	54%
Ag Ed Major	49%	37%	52%	36%	41%	49%
Program Completers	85%	10%	88%	4%	83%	17%

* Only White and Hispanic are reported for brevity. These are the two largest groups.

Conclusions

Our study illuminates demographic disparities in the secondary agricultural teacher pipeline across the three universities. While secondary agriculture programs and teacher preparation are slowly diversifying, the race and gender equity is far from optimal. Program completers are predominantly White and female. Concurrently, Hispanic students show strong enrollments, yet their presence markedly declines among program completers. The data underscore the necessity for a more diversified secondary agricultural teacher pipeline, particularly as current figures indicate concerning disparities in accessibility and representation.

Implications

Enhancing Equity: The prominent representation of female and White program completers contrasted against the underrepresentation of Hispanic and male students indicates potential barriers in their academic journey. These barriers, whether institutional, financial, or socio-cultural, need identification and mitigation. Effective interventions may encompass financial aid, community integration, and more academic support. Recruitment and Role Models: As suggested by Cherng and Halpin (2016), a diverse educator cohort can foster positive learning environments by providing varied perspectives, serving as inclusive role models, and enriching the learning environment. Strategic Initiatives: Universities and California policymakers must devise strategies that promote equity in both enrollment and completion rates. Addressing these challenges ensures that agricultural education becomes more inclusive, representative, and equitable, fostering a richer learning environment for all students.

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