Identifying Laboratory Instruction and Teaching Concerns of Illinois Agriculture Teachers

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Introduction

The 1980's and beyond ushered in an era of educational research and reform that focused on preparing teachers, teacher recruitment and retention, and providing quality professional development (Borman & Dowling, 2008). As education changes so do the needs and challenges of teachers. Early literature identifies three concern stages: pre-service concerns, early teaching concerns, and late teaching concerns (Fuller, 1969). Fuller's work shows that as teachers gain experience, their concerns change. Past research indicates teachers are affected by challenges outside of the classroom as well. Fessler and Christensen (1992) explain that the characteristics of teachers are influenced by the organizational environment as well as the personal environment. Current concerns of teachers must be identified to improve current professional development and teacher education practices. The results of this study will provide a better understanding of the concerns of agriculture teachers in the state of Illinois and allow stakeholders to evaluate current professional development offerings and teacher education programs.

Theoretical framework

The theoretical framework for this study is based on the ideas of Fessler and Christensen (1992) and their Teacher Career Cycle. Previous studies, including the works of Fuller (1969) identified stages in teaching with significant characteristics, laid the foundation of the Teacher Career Cycle. The teacher career cycle is influenced by two environmental conditions: personal environment and organizational environment.

The Fessler and Christensen Model expands on the influences the teacher's personal environment has on the experiences of the teacher. The authors consider items like family, crises, and life stages; they address their impact on the teacher. When supportive, the organizational and personal environment will likely be a source of encouragement for the teacher.

Methodology

The study focused on three objectives: (a) identify the main concerns of Illinois agriculture teachers; (b) identify the main concerns of Illinois agriculture teachers when teaching laboratory instruction; and (c) identify the level of concerns among Illinois agriculture teachers based on years of experience. This research study collected data via the internet survey instrument SurveyMonkey. The target population consisted of current agricultural educators of all ages and experience levels in Illinois (N=432). The link for the survey was distributed initially by email to all 2019-2020 Illinois agriculture teachers. The instrument had three main sections. In the first general demographic data was gathered. The second section of the survey asked two open-ended questions. Question one was: "When you think about teaching, about what are you most concerned?" The second open-ended question was: "When you think about teaching laboratory classes, about what are you most concerned?" In the third section, the Likert-type scale questions from Stair, Warner, and Moore (2012) were used. The scale contained 20 common areas of concern for agriculture teachers which have been identified in previous literature.

The quantitative data was analyzed using descriptive statistics of mean, standard deviation, frequencies, and percentages in Microsoft Excel. The qualitative data from the open response questions used open coding to categorize the concerns expressed by the teachers (Merriam & Tisdell, 2016).

Results

Objective One

Student motivation was the most mentioned concern among the teachers with a total of 29 responses. Concerns relating to remote learning/COVID-19 and parent concerns were mentioned 11 times. Other major concerns include Maintaining a 3-circle program, student achievement, work/life balance, and curriculum.

Objective Two

Student safety was the number one concern of teachers when teaching in a laboratory setting, with 54 mentions. A lack of resources and/or funding was expressed by 39 teachers. 26 teachers were concerned they did not know enough about the content or the equipment to teach the content effectively. Other concerns included student behavior and discipline, student engagement and achievement, and the time to plan and prepare land, horticultural, and mechanics labs.

Objective Three

In Stair et al. (2012), only concerns above a mean of 4 were considered areas of concern. Since none of the means in this study were above the 4.00 threshold, researchers focused on concerns with a mean score of 3.5 or higher. Early career teachers had only one concern above a 3.5/5; Motivating Students (3.55). Middle career teachers identified 4 concerns rating greater than 3.5/5. They were: Recruiting and Retaining Students (3.86), Time Management (3.67), Balancing Personal and Professional Responsibilities (3.59), and Motivating Students (3.58). Late career teachers had one category of concern, which was Balancing Personal and Professional Responsibilities (3.53).

Conclusions

Among the teachers, motivating students was their most mentioned concern. One teacher said, “I'm concerned about finding ways to interest my students. I worry that many of my students are preoccupied with so many things outside of school, and even outside of their own lives (obsessing over internet celebrities and trends, etc.), that they have limited capacity for caring about learning. They truly believe that school has no purpose because they can ‘Just Google it’ for all of life's answers.” Previous research on school-based agriculture education teachers indicated that professional development on the topic of student motivation was needed (Smalley et al., 2019).

“My biggest concern is not knowing a lot about mechanics and taking on a mechanics class. I want to feel confident in the shop but somehow I feel that universities are lacking in helping teach in this area.” This sentiment has been identified among the needs of beginning agriculture teachers in other literature (Figland et al., 2019; Sorensen et al., 2014).

Recommendations

Since teachers have different needs at different career stages, stakeholder groups should consider tailoring professional development to different groups of teachers to eliminate one-size fits all in-services. The professional development and university course curriculum in the areas of ag mechanics and safety, remote learning, motivating students, external funding, recruitment, and retention of students, balancing personal and professional life, and time management, should continue to be implemented.

It is recommended that teacher education programs evaluate the current curriculum as it applies to agricultural mechanics and safety to meet the needs of pre-service teachers.

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