Pre-Service Agricultural Science Teachers and TEKS

Past research has examined many concerns expressed by agricultural science student teachers while in their student teaching program experience. Fritz and Miller (2003) found that agriculture science student teachers were most concerned with their self-adequacy. Respondents had concerns related to subject matter knowledge, discipline, and administrative rules. Student teachers identified with closing a gap between self-adequacy and subject matter knowledge as their top priority, when compared with other concerns. Roberts and Dyer (2004) found traditionally certified agriculture teachers had greater desires and needs for in-service training than did alternatively certified agriculture teachers. In the area of technical agriculture, traditionally certified teachers indicated a high level of training needs in biotechnology, animal reproduction, aquaculture, greenhouse management, genetic engineering, animal health, agricultural sales and global positioning systems. Overall, traditionally certified agriculture teachers had greater self-perceived in-service needs in more than half of the surveyed items.

Based on these findings, we propose a census of Texas agriculture science student teachers to determine their knowledge and comfort levels for teaching specific Texas Essential Knowledge and Skills (TEKS) in each of the eight comprehensive high school knowledge and skill areas. Sixty-two students from Texas Tech University, Tarleton University, Texas A&M University, and Sam Houston State University are currently enrolled in the fall 2005 student teaching program. By measuring self-perceived knowledge and comfort levels for teaching the comprehensive high school TEKS we may determine an association between knowledge and comfort in subject matter areas. Significant associations (relationships) may aid agricultural science teacher program planners with refining their curricula to better meet state of Texas mandated TEKS.

Respondents will be asked to rate their self-perceived knowledge and comfort levels for teaching the comprehensive TEKS using the Borish Model for Needs Assessment (Borish, 1980). Individual knowledge and comfort scales (0 = none, 1 = low, 2 = adequate, and 3 = high) will be summated to determine overall knowledge and comfort levels for teaching each of eight Applied Agricultural Science and Technology TEKS areas. The eight areas include: 1) Agribusiness; 2) Agricultural Mechanics; 3) Animal Sciences; 4) Computer Applications; 5) Environmental Science; 6) Food Science; 7) Horticultural Sciences; and 8) Soil/Plant Sciences. In addition, respondents will be asked to record the number of college-level courses completed in each of the eight Applied Agricultural Science and Technology TEKS areas.

The summated portion of the proposed electronic survey is content valid because the Applied Agricultural Science and Technology TEKS have been determined by the State of Texas knowledge and skill areas required in grades 9 through 12. These particular areas were used because 1) they cite specific hands-on skills that students should be able to perform and 2) the skills outlined in these courses are applicable to all other courses for that subject area.

Data analyses will be comprised of descriptive statistics and associations between the variables of interest will be determined using bivariate analysis.