Conceptual Framework

Bandura (1986) associated students’ perceptions of their competence in a subject to their motivation and achievement for that subject, a perception he termed “self-efficacy.” Self-efficacy has been defined by Pajares and Miller (1994) as “a context-specific assessment of competence to perform a specific task, a judgment of one’s capabilities to execute specific behaviors in specific situations” (p. 194). Pajares (1996) found that “self-efficacy beliefs are strong determinants and predictors of the level of accomplishment that individuals finally attain” (p. 545) and that a person’s self-efficacy is linked to his or her level of effort, persistence, and resilience in an endeavor.

Fritz and Miller (2003) found student teachers “were more focused on dealing with self-adequacy concerns” (p. 51) involving subject matter and discipline issues than on any other area. They proposed “addressing concerns during student teaching to help teachers when they enter their first year of teaching” (p. 52).

An earlier study by Cano and Newcomb (1990) specifically compared agriculture science teachers’ teaching plans to Ohio state guidelines, and assessed those teaching plans according to a theoretical framework of cognition levels. Cano and Newcomb determined that “teachers are devoting a greater percentage of time to some subject matter areas than is recommended by state of Ohio guidelines and spending less time in other areas” (p. 51), although these authors did not attempt to correlate such adherence or deviation with measures of self-efficacy.

McLean and Camp (2000) examined selected U.S. pre-service agricultural teacher education programs and concluded that the “content depth of teacher preparation programs in agricultural education] varied widely across the institutions” (p. 33). The authors stated that members of the agricultural education profession “should be able to agree on certain,
fundamental knowledge and skills needed by potential teachers in agricultural education” (p. 33), but noted that little agreement existed between institutions as to what was needed to prepare future agricultural education teachers. McLean and Camp further indicated that agricultural education professionals needed to agree (“seek a consensus”) on the basic skills that should be taught to pre-service agriculture science teachers. Conroy and Kelsey (2000) found that teacher educators felt “standards could be utilized as the basis for reforming pre-service curriculum, which would result in enhanced program planning and a structure for staff development at the university level” (p. 13), supporting the McLean and Camp study.

Joerger’s (2002) study supported earlier studies, in that he found a need for “researchers to aggregate, validate, test and refine a contemporary list of professional competencies that could be used as a basis for assessing the competence and inservice education needs of beginning agricultural education teachers” (p. 22).

Such research indicates a strong need for using standardized competencies when evaluating agriculture science teachers’ subject matter knowledge and comfort levels for teaching specific subjects in the classroom. By adhering to standardized competencies, individual states could uniformly implement the types of instruction needed in pre-service agriculture programs, thereby better preparing our future agriculture teachers.

One state’s efforts to provide such competencies are exemplified by the Texas Essential Knowledge and Skills (TEKS). The TEKS, a state-mandated curriculum defined by specific objectives, were developed by the Texas State Board of Education (Texas Education Agency, 1998) working with the direct participation of educators, parents, business and industry representatives, and employers…[T]eams composed of representatives of each of these groups drafted
curricula for each content area and grade level, kindergarten through Grade 12, such that the knowledge and skills would: ensure rigor in the curriculum; articulate what all students should know and be able to do; specify the levels of performance expected of students at particular grade levels; and ensure that the knowledge and skills meet the learning needs of all students. (p. 47)

TEKS objectives direct the teaching of all curricula in Texas. According to the Texas Education Agency (TEA), schools districts and schools where students do not master class-specific TEKS objectives may suffer state sanctions (TEA, 2005b). Teachers must align their instruction to the TEKS objectives, with particular attention to subject matter and grade level. TEKS objectives provide uniform guidelines for mastery of knowledge and skills expected in all classes (K-12). Therefore, it is imperative that pre-service teachers are knowledgeable and comfortable with teaching subject matter according to the TEKS objectives.