Perceptions of a First Year Experience with the Agriculture Courses for Dual-Credit Initiative

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Introduction

The global economy demands a more educated workforce which directly depends upon high school graduation rates and successful career preparation (Brandon, 2009). Only sixty percent of college students earn a Bachelor's degree at a four year institution within six years (Nat. Center for Ed Stats, 2016). More specifically, there is a documented shortage of qualified graduates for agriculture jobs (USDA, 2015). One recognized method to increase student graduation rates is through dual credit courses (Adelman, 2006; Swanson, 2008). Dual credit frequently occurs between public schools and community colleges with the focus on core curriculum courses. However, previous dual credit programs in agricultural sciences have demonstrated that such institutional linkages are promising and that the dual credit model offers a practical solution for expanding the availability of university courses to all populations, including urban and underserved students. As a result, TAMU Commerce developed and assessed a new curricular model and instructional strategies for delivering a dual credit course in agricultural sciences.

Literature Review and Theoretical Framework

Dual credit courses stem from agreements between high schools, universities and community colleges whereby a high school junior or senior enrolls in a college course and simultaneously earns college credit and high school credit for the course (Radunzel, Noble & Wheeler, 2014). Stuhl and Vargas (2012) found that dual credit students were nearly 50% more likely to earn a college degree from a Texas college within six years than non- dual credit students. Additionally, dual credit students were significantly more likely to attend and persist in college to complete an Associate's degree or higher within six years. Momentum to completion was found as an important factor in a student's quest for a college degree based on the indicators of 20 credits completed at end of the first year, enrolling in college immediately after high school, and having earned college credit (Adelman, 2006; Swanson, 2008). The theory of planned behavior (TPB) states that a person's behavior is determined by their intention to perform a given behavior, as it can be predictable, deliberative and planned (Ajzen, 1991). The theory assumes human action is guided by three considerations: behavioral beliefs, normative beliefs, and control beliefs. These considerations are useful for assessing people's attitudes, norms and behavioral intention. The theory has application to educational settings, particularly in the area of dual-credit programs where knowledge is being disseminated to produce behavioral change.

Purpose and Objectives

The goal of this research was to strengthen partnerships with secondary schools by providing collaboration with university faculty in the delivery of an online animal science course for dual credit. The objectives were: (1) To assess student perceptions of the dual credit course, (2) To assess perceptions of secondary agriculture teachers who facilitated the dual credit course, and (3) To assess participants' perceptions of a summer workshop regarding its effectiveness in preparing them to teach or facilitate future dual credit courses.

Methods and Procedures

The population for this study was secondary schools in Texas that offer instruction within the discipline of agricultural sciences. The assessments focused on the delivery of an online animal science course in collaboration with secondary schools for dual credit in spring 2016. Schools, students, and teachers were recruited based on location, diverse student demographics, interest in dual credit courses, and programs that offer agricultural courses. Thus, the sample for the three assessments included secondary students (N=16) enrolled in the animal science dual credit

course, secondary teachers (N=3) facilitating the animal science dual credit course, and secondary teachers (N=6) who participated in the summer professional development for dual-credit institute. A post-test survey methodology was utilized. Surveys were designed via SurveyMonkey™ and questions were derived from previous literature on dual credit courses and programs, as well as Texas initiatives and legislation (Adelman, 2006; OFI, 2010; Radunzel, J., Noble, J. & Wheeler, S., 2014; Stuhl and Vargas, 2012; Swanson, 2008). Data collection procedures outlined by Dillman, Smyth, and Christian (2009) were followed for survey implementation. The final response rate for the student survey was 87.5% (n=14); 66.6% (n=2) for cooperating instructors; and 100% (n=6) for summer workshop participants. Descriptive statistics, means, frequencies, and percentages were analyzed using Excel.

Results

Of the 14 student respondents, seven (50%) lived on a farm, nine (64%) had been in FFA, one had been in 4-H, and 10 (71%) had animals at home with the most common being horses, cattle, chickens, and dogs. All enrolled students had a GPA over 3.0. Twenty eight percent (n=4) had taken an online course before, while 50% (n=7) had taken a dual credit course previously with the most common being English. The majority of students said their motivation for taking the course was to gain college credit. Fifty seven percent (n=8) stated they anticipated enrolling in a two or four year university immediately after high school. Cooperating instructors (n=2) previously taught one or two dual credit courses. Both instructors strongly agreed that dual credit students participated in rigorous learning, developed realistic expectations for post-secondary coursework, increased the likelihood to pursue post-secondary education, developed a better understanding of their academic skills, and raised their post-secondary educational aspirations. All six workshop participants overwhelmingly reported the summer institute improved their preparedness to teach online courses, developed new ideas about how to teach in their academic discipline, learned new online teaching skills, benefitted from peer and university support, gained a better understanding of expectations of college faculty for online students, established higher standards for student work, and were energized as a teacher. Fifty percent (n=3) of workshop participants indicated that they planned to facilitate or teach future dual credit courses.

Conclusions and Recommendations

This study was limited by its sample size; thus, findings should not extrapolate beyond the population. However, information gained from this first year study was useful to further develop the initiative in the future. Project design fostered collaboration and involvement at the secondary level with key university faculty, thus building a stronger connection for recruitment and retention of agricultural students. The theory of planned behavior (Ajzen, 1991) was useful to assess students' beliefs, influences, and self-efficacy relating to dual credit coursework and how this connected to their intentional behavior of enrolling in post-secondary education. Students were motivated by gaining college credit, as supported by previous research, and should be a priority message when recruiting for future dual credit programs. Universities should take advantage of this trend by offering a variety of agricultural dual credit courses to secondary students. Yet, in order to teach and facilitate dual credit courses, instructors must be prepared to do so with structured professional development opportunities as highlighted in the findings. Expansion of the dual credit model to include other courses in agricultural and food sciences is anticipated as well as the increase in the number of secondary programs wanting to offer dual credit.

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