

USING AGRICULTURAL EDUCATION GRADUATES' GEFT SCORES TO ASSESS THEIR LEVEL OF JOB SATISFACTION

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Abstract

The purpose of this study was to assess satisfaction variables (salary, academic advising, career satisfaction, and overall program quality) of agricultural education graduates at the University of Missouri according to their learning style. The Group Embedded Figures Test (GEFT) was used to measure learning style. The results of the study revealed the overall mean GEFT score for the graduates were 12.9, indicating the group were more field-independent than field-dependent. Over two-thirds (68.93%) of the graduates were identified as field-independent. No practical differences existed in employment decisions between those who were field-independent and those who were field-dependent. When assessing salary, nearly 15% of field-dependent learners earned \$50,000 or more as compared to 7% of field-independent learners. When aspects of academic advising mean scores were compared by learning style, little differences existed. When job satisfaction scores were correlated with GEFT scores, a positive, low correlation existed ($r = .11$), indicating that GEFT was not a good predictor of job satisfaction, even though it had been linked with academic performance and overall success in higher education). In all, when compared by GEFT learning style, little differences existed in current employment, salary, academic advising, overall program quality, and job satisfaction.

Introduction – Theoretical Framework

Because not all graduates enter the exact professions in which they were prepared, they must be equipped with transferable skill sets, (Candy & Crebert, 1991; Evers, Rush & Berdrow, 1998; Garton & Robinson, 2006; Hewitt, 2005; Hofstrand, 1996; Mullen, 1997; Peddle, 2000; Robinson & Garton, 2008; Robinson, Garton & Terry, Jr., 2007; Shivpuri & Kim, 2004; Tetreault, 1997). To that end, not all agricultural education graduates enter the teaching profession. In a study of agricultural education graduates at the University of Missouri, Cartmell and Garton (2000) found over one-third had entered professions outside of teaching, which has, perhaps, impacted the shortage of agricultural education teachers (Camp, Broyles, & Skelton, 2002; Kantrovich, 2007). Additionally, because of the teacher shortage, graduates from disciplines other than education are entering the teaching ranks as alternatively certified teachers in agricultural education programs (Robinson, 2008; Rocca & Washburn, 2006). Therefore, it is important that higher education prepares its graduates for a plethora of career opportunities (Cole & Thompson, 2002; Evers et al., 1998; Martin, Milne-Home, Barrett, Spalding, & Jones, 2000; McLaughlin, 1995; Peddle, 2000).

Specifically, agricultural education curriculum should address the educational and career preparation needs of students who desire careers outside of school-based teaching (Goecker, 1992). When students are equipped for a variety of careers, the preparation is reflected well upon the university. However, not all graduates feel prepared once they graduate. According to Candy and Crebert (1991), graduates sometimes struggle because they are unfamiliar with how to cope in a new environment. Graduates fail to adjust to the lack of a structured environment such as those provided in higher education settings. Because graduates struggle to adjust to their new environment, it becomes increasingly important for universities to track their graduates, know where they go, and what becomes of them in their future endeavors. It also becomes important to identify factors, within the control of the university, that contribute to preparing students for successful careers. Martin et al. (2000) concluded that identifying such factors could better prepare graduates for their chosen careers and meet the needs of employers. However, the task of improving these factors becomes more difficult when a program offers a variety of career options.

A possible factor to consider is one's level of job satisfaction. Job satisfaction could be viewed as a determinant for the retention of graduates in their chosen career. "Job satisfaction refers to the individual's attitude toward the various aspects of their job as well as the job in general" (Rogers, Clow & Kash, 1994, p. 15). For graduates to maximize their performance on the job, they must be satisfied with their job.

Tse & Wilton (1988) stated in order for people to experience satisfaction on the job, they must perceive themselves as performing successfully. Hughes (1937) posited that for success and satisfaction to occur in one's job, both objective and subjective criteria must be present. Heslin (2005) noted that objective career success entails pay and promotions while subjective career success entails job satisfaction, earnings, and job status. Kaskiri (2006) opined that success related to one's career is based upon criteria such as salary and level of job satisfaction as well as predictors such as cognitive ability, socio-economic status, and personality factors.

Additionally, given the context of the university setting, could the way a person performs or learns be used to predict his/her job satisfaction? Pace (1987; cited in Martin et al., 2000) noted that “perceptions of learning . . . were related to college satisfaction” (p. 201). If a student’s perception of learning relates to being satisfied in college, can learning style be used to predict one’s career satisfaction?

Lovelace (2005) stated that “learning style is the way that students begin to concentrate on, process, internalize, and remember new and difficult academic information” (p. 176-177). Learning style has been explained as distinct behaviors which serve as stable indicators of how a person learns and adapts to his/her learning environment (Gregorc, 1979). It has also been identified as a factor influencing how students transition from school to work. Candy and Crebert (1991) noted a disparity between how a university prepares a student for work and how the workplace utilizes that employee’s learning style.

One form of measuring one’s learning style is the group embedded figures test (GEFT). An extensive amount of research in agricultural education has linked learning style to the field-dependence/independence (Cano & Porter, 1997; Cano, 1999; Garton, Dauve, & Thompson, 1999; Guild & Garger, 1985; Kitchel & Cano, 2001; Torres, 1993; Torres & Cano, 1994; Witkin, Oltman, Raskin & Karp 1971) GEFT test. Individuals who prefer a field-dependent learning style tend to have a global perception, struggle to solve problems, are more attuned to their social environment, learn better when concepts are humanized, and favor a spectator approach to learning. Additionally, field-dependent learners tend to be more extrinsically motivated and learn better when organization and structure is provided by the teacher (Witkin, Moore, Goodenough, & Cox, 1977).

Conversely, individuals who prefer a field-independent learning style tend to view concepts more analytically, and find it easier to solve problems. They also tend to favor learning activities that require individual effort and study. Additionally, field-independent learners prefer to develop their own structure and organization for learning, are intrinsically motivated, and are less receptive to social reinforcement (Witkin et al., 1977). In a study of The Ohio State University agricultural education majors, Kitchel and Cano (2001) found that 64% were field-independent.

While learning styles (e.g. GEFT scores) have been found to have a positive relationship with academic performance, as measured by grade point average (Torres, 1993; Torres & Cano, 1994), performance in agriculture courses (Garton, Dauve, & Thompson, 1999), and overall success in higher education (Cano & Porter, 1997; Cano, 1999), there have been no studies that have sought to determine if relationships exist between GEFT score (learning style) and career satisfaction of agricultural education graduates. However, the claim seems plausible. Vangsnes (2007) stated

It has been shown . . . that individuals in different career fields exhibit characteristics of learning that seem to correlate with job responsibilities. What has not been discussed is a possible relationship between vocational satisfaction in relationship to preferred learning style (p. 66).

In fact, Vangsnes suggested that a “person’s satisfaction with his/her job, has to do with the way people learn, or their learning style” (p.1). Vangsnes further posited “If people pursue their desired field of study based upon their learning style, then it is reasonable to assume they will also exhibit more vocation/career satisfaction than those individuals who have not” (p. 66). Therefore, the foci driving this study were twofold: to examine if and where the relationships between graduate satisfaction and their learning style existed and to determine what implications graduates’ learning style had upon their career choice.

Purpose and Objectives

The purpose of this study was to compare the career satisfaction variables (salary, academic advising, career satisfaction and overall program quality) of agricultural education graduates at the University of Missouri (MU) according to their GEFT learning style score. The following objectives were formulated to guide the study:

1. Describe the salary and GEFT learning style scores of the population.
2. Compare graduates on their current employment decision by their GEFT learning style scores.
3. Compare graduates’ salaries, perceptions of the academic advising they received, and their views about the overall program quality by their GEFT learning style scores.
4. Compare graduates’ level of career satisfaction by their learning style and determine if a relationship exists between their perceptions of career satisfaction and GEFT learning style scores.

Methods

This research was descriptive in nature and consisted of a five-year census of MU agricultural education graduates ($N = 112$). Students enrolled in agricultural education at this institution currently choose between two degree options: teacher certification and leadership. Those who choose the teacher certification option acquire a teaching license and develop specific skills related to teaching secondary agriculture in school-based settings. Conversely, those in the leadership option develop and apply their leadership, communication, and human relation skills to careers in industry by planning, managing, and disseminating information in non-formal educational settings. In all, a total of 96 graduates responded for an 86% response rate.

In particular, the population for this study consisted of the same group used in a related study by (Garton & Robinson, 2006). As to avoid duplication of the findings, yet properly describe the context of the sample, the following demographic data of graduates are provided: 86% were employed full-time. Of these full-time graduates, 39% were employed as secondary public school teachers, and the remaining 61% of graduates were employed in various industry positions such as sales, management, and communications to name a few.

For the purpose of this study, two parallel questionnaires were developed: one for graduates who pursued careers in industry and one for graduates who pursued teaching secondary agriculture. The questionnaires consisted of seven sections: occupational status, current job satisfaction, factors influencing occupational change, educational experiences, program assessment, quality of academic advising, and open-ended questions.

Specifically, the Brayfield-Rothe (1951) job satisfaction instrument, later modified by Warner (1973), was included for collecting data pertaining to this study. This section consisted of job satisfaction and dissatisfaction factors and employed a five-point Likert-type response scale consisting of: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree and 5 = strongly agree. Reliability estimates were taken from previous research by Cano and Miller (1992a; 1992b) who reported coefficient alphas of .89 and .94, respectively, when assessing the job satisfaction of secondary agricultural education teachers in Ohio while using the same instrument.

Agricultural education faculty and university career placement personnel served as the panel of experts and established the content and face validity for the remaining sections of the instruments. Reliability for the remaining sections was established through a pilot test with 16 senior agricultural education students. Spearman-Brown split-half reliability coefficients ranged from .82 for the quality of academic advising section to .69 for the educational experiences section.

The Group Embedded Figures Test (GEFT) (Witkin et al., 1971) was administered during the graduates' undergraduate program to assess the preferred learning style of students as field-dependent or field-independent. The possible range of scores on the GEFT is zero to 18. Individuals scoring a 0-11 were considered to prefer a field-dependent learning style. Conversely, individuals scoring 12-18 were considered to prefer a field-independent learning style. The GEFT is a standardized instrument that has been used in educational research for more than 30 years (Guild & Garger, 1985). The validity and reliability of the GEFT was established by the developers of the instrument. The GEFT is a timed test; therefore, internal consistency was measured by treating each section as split halves ($r = .82$) (Witkin et al., 1971). Descriptive statistics (means, frequencies, percentages, and standard deviations) were used to analyze the data. A Pearson-product moment correlation was used, for objective five, in an effort to describe the relationship between career satisfaction and learning style.

Findings

Objective one sought to describe the salary and GEFT scores of the population. A comparison of salaries revealed that only one graduate with a public school teaching career earned less than \$20,000, while 10 graduates with industry careers earned less than \$20,000 (Table 1). In contrast, no teachers earned a salary of \$50,000 or greater. However, nine graduates with industry careers earned an annual salary of \$50,000 or greater.

Table 1

Salary Comparison of Graduates in Secondary Teaching vs. Industry Careers

Salary	Public School Teaching		Industry Position	
	<i>f</i>	%	<i>f</i>	%
Less than \$20,000	1	2.7	10	17.9
\$20,000 – 24,999	1	2.7	5	8.9
\$25,000 – 29,999	3	8.1	8	14.3
\$30,000 – 34,999	13	35.1	7	12.5
\$35,000 – 39,999	15	40.5	8	14.3
\$40,000 – 44,999	3	8.1	4	7.1
\$45,000 – 49,999	1	2.7	5	8.9
\$50,000 or greater	0	0	9	16.1
Total	37	100.0	56	100.0

An analysis of GEFT learning style scores revealed a mean score of 12.88 ($SD = 3.89$), indicating that the group was more field-independent than field-dependent (Figure 1). The most frequent score was 15 ($n = 19$), followed by scores of 14 and 18 ($n = 11$) for each; thus, it was found that 32 (31%) of those who completed the GEFT were field-dependent and 71 (69%) were field-independent.

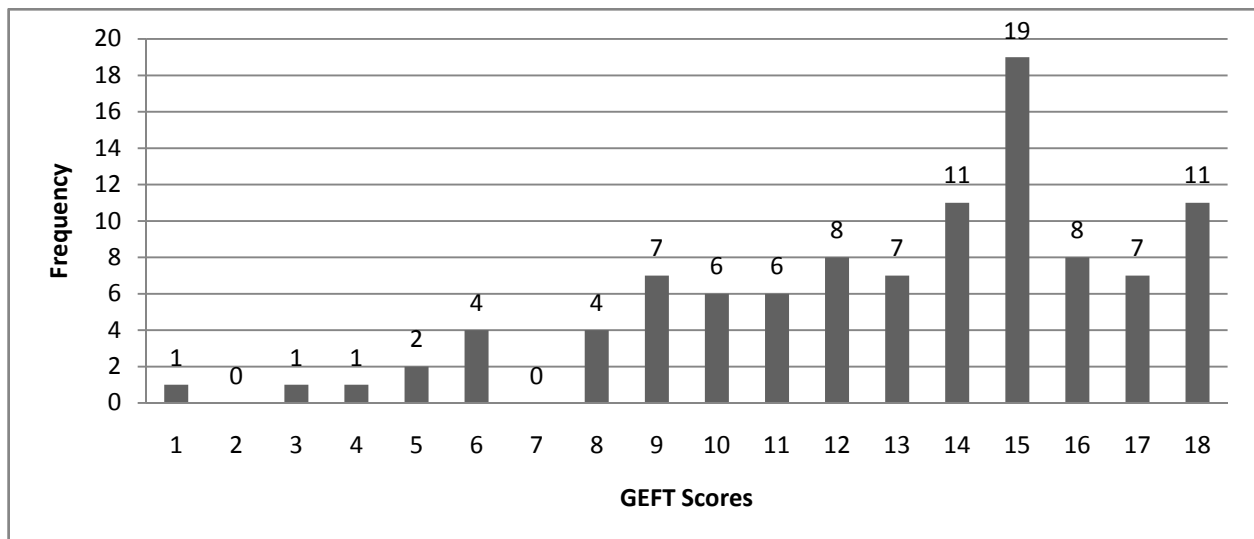


Figure 1. Distribution of GEFT learning style scores.

In meeting objective two, which was to compare graduates on their current employment decision by their GEFT learning style, Table 2 was constructed and sorted by difference in percent from highest to lowest. When comparing the percentage of differences between teachers and industry professionals by employment decision, the highest percentage difference between those who were field-dependent and those who were field-independent was in “sales” (difference = 7.79%) and “public school teaching” (difference = 7.46%) as their current employment. In contrast, the lowest percentage difference between those who were field-dependent and those who were field-independent was in “production agriculture” and “financial services” (differences = .22%, respectively).

Table 2
Current Employment Decisions Compared By GEFT Learning Style Scores

Employment Decision	Field-Dependent		Field-Independent		Differences
	<i>f</i>	%	<i>f</i>	%	
Sales	6	20.69	8	12.90	7.79
Public School Teaching	10	34.48	26	41.94	7.46
Government Agencies	2	6.90	1	1.61	5.29
Communications	1	3.45	4	6.45	3.00
Education/Training (non-school)	1	3.45	4	6.45	3.00
Management	3	10.34	8	12.90	2.56
Other	2	6.90	3	4.84	2.06
Graduate School	2	6.90	4	6.45	0.45
Production Agriculture	1	3.45	2	3.23	0.22
Financial Services	1	3.45	2	3.23	0.22
Total	29	100.00	62	100.00	

Objective three sought to compare graduates’ salary, academic advising, and overall program quality by their GEFT learning style scores. An examination of the distribution appears in Figure 2.

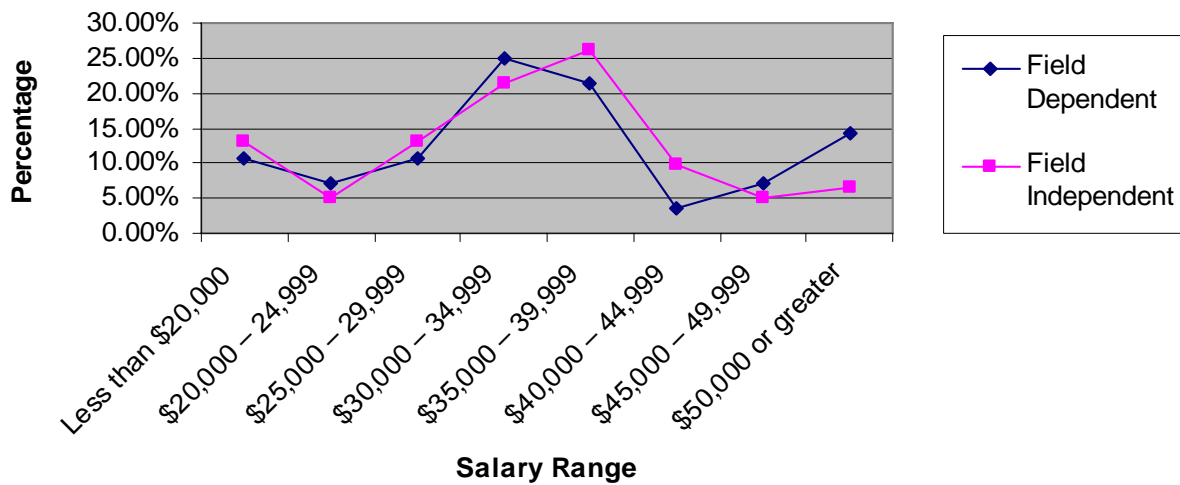


Figure 2. Distribution of salary by GEFT learning style scores.

The greatest amount of discrepancy occurred at \$50,000 or more. Nearly 15% of field-dependent graduates made \$50,000 or more as compared to roughly 7% of field-independent graduates. In addition, roughly 14% of field-independent learners made less than \$20,000 as compared to 11% of field-dependent graduates. In all, the greatest amount of field-independent learners (26%) earned a salary between \$35,000 - \$39,999, while the greatest amount of field-dependent learners (25%) earned a salary between \$30,000 - \$34,999.

Table 3 compared academic advising mean scores by GEFT learning style scores and was sorted by differences in mean scores from highest to lowest. Differences in the academic advising mean scores by learning style ranged from .25 to .03. Six academic advising items had a mean score difference above .10 while four items had mean score differences below .10. The largest mean score difference was for the item “planning courses” (difference = .25), and “Organization – Records” (difference = .19), “degree requirements” (difference = .17), “meeting availability” (difference = .13) and “academic excellence” (difference = .12) followed respectively. “Career advising” (difference = .03) had the smallest mean score difference. As a whole, both field-dependent and field-independent graduates were most satisfied with their academic advisor’s ability to prepare them for their degree’s requirements ($M_{\text{field-dependent}} = 4.59$, $M_{\text{field-independent}} = 4.42$). Likewise, both field-dependent and field-independent graduates were least satisfied with the academic advising item “experiences – career preparation” ($M_{\text{field-dependent}} = 3.48$, $M_{\text{field-independent}} = 3.53$).

Table 3

Academic Advising Mean Scores Compared by GEFT Scores

Academic Advising Items	Field-Dependent		Field-Independent		Differences
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Planning Courses	4.41	.73	4.16	.91	.25
Organization – Records	4.48	.51	4.29	.88	.19
Degree Requirements	4.59	.57	4.42	.84	.17
Meeting Availability	4.45	.69	4.32	.84	.13
Academic Excellence	4.31	.71	4.19	.90	.12
Academic Progress	4.21	.73	4.10	.96	.11
Adequate Time	4.41	.73	4.35	.87	.06
Respect – Value Opinion	4.28	.96	4.34	.85	.06
Experiences – Career Preparation	3.48	.99	3.53	1.13	.05
Career Advising	3.69	1.04	3.66	1.07	.03

Note. Scale: 1 = Poor, 2 = Fair, 3 = Satisfactory, 4 = Very Good, 5 = Excellent

The overall program quality mean scores by GEFT learning style scores and was sorted by differences in mean scores from highest to lowest. Eight overall program quality items had a mean score difference above .10 while six items had mean score differences below .10 (Table 4).

When comparing field-dependent and field-independent learners on items related to program quality, the largest mean score difference was with the item “job placement” (difference = .28). The second highest was a difference of .27 with the item “student organizations.” “Internships” (difference = .25), “quality of students” (difference = .20) and “support since graduation” (difference = .17) rounded out the top five. Both field-dependent and field-independent learners scored “agricultural education facilities” (difference = 2.97) exactly the same.

Table 4

Overall Program Quality Item Mean Scores as Compared by GEFT Learning Style Scores

Overall Program Quality Items	Field-Dependent		Field-Independent		Differences
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Job Placement	2.68	.90	2.96	.89	.28
Student Organizations	3.82	.39	3.55	.70	.27
Internships	3.67	.62	3.42	.88	.25
Quality of Students	3.72	.45	3.52	.54	.20
Support Since Graduation	3.11	.83	2.94	.94	.17
Instruction	3.76	.44	3.63	.49	.13
Computer Support	3.04	.88	2.93	.79	.11
Availability of Ag Ed Courses	3.59	.50	3.69	.53	.10
Curriculum Organization	3.62	.56	3.71	.49	.09
Availability of Required Courses	3.11	.74	3.18	.59	.07
Courses Preparing for Employment	3.34	.55	3.40	.59	.06
Faculty Competence	3.76	.44	3.73	.45	.03
Courses Preparing for Grad School	3.47	.64	3.46	.69	.01
Ag Ed Facilities	2.97	.73	2.97	.79	.00

Note. Scale: 1 = Poor, 2 = Fair, 3 = Good, 4 = Excellent

Objective four sought to compare graduates' level of career satisfaction by their GEFT learning style scores and determine if a relationship existed between career satisfaction and learning style. Career satisfaction mean scores differed by .05 between field-dependent and field-independent learners (Table 5). A low positive Pearson-product moment correlation of .11 was found between overall job satisfaction and GEFT scores (Davis, 1971).

Table 5

Relationships Between Overall Career Satisfaction Mean Scores by GEFT Scores

Variable	Field-Dependent		Field-Independent	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Overall Job Satisfaction	4.12	.41	4.17	.45

Note. $r = .11$; Scale: 1 = Strongly Disagree to 5 = Strongly Agree

Conclusions

With regard to salaries, graduates in school-based teaching positions were more similar as opposed to those with industry careers. Approximately 75% of the school-based teachers earned a salary in the range of \$30,000 to \$39,999. While some industry professionals started at lower salaries as compared to school-based teachers, there is no ceiling as to the salary an industry professional can make.

Of these graduates, the overall mean GEFT learning style score was 12.9, indicating the group leaned toward being more field-independent than field-dependent. Over two-thirds (69%) were identified as field-independent, meaning the group as a whole tended to be more analytical and independent in its learning preference (Witkin et al., 1977). This is consistent with the findings of Kitchel and Cano (2001), who found that 64% of agricultural education majors were field-independent.

While both field-dependent and field-independent learners were equally satisfied with their chosen career, the graduates in this study with the highest salaries were predominately field-dependent. Specifically, a higher percentage of graduates entering sales type positions were more field-dependent, while those teaching in public schools were predominately field-independent.

Little differences existed when comparing aspects of academic advising mean scores by GEFT learning style score. The item “help in planning courses for degree program” had the highest amount of discrepancy, while “quality and availability of job placement” held the highest mean score difference between learning styles on overall program quality. Overall, graduates tended to be very positive toward the advising they received regardless of GEFT learning style.

Job satisfaction mean scores were calculated and correlated with GEFT learning style scores. A positive, low correlation resulted, indicating that GEFT was not a good predictor of job satisfaction even though it had previously been linked with academic performance and overall success in higher education (Cano, 1999; Cano & Porter, 1997; Garton, Dauve, & Thompson, 1999; Torres, 1993; Torres & Cano, 1994).

Implications

One could imply the reason more field-dependent learners are entering sales positions and earning greater salaries is due to the fact that these individuals are more extrinsically motivated. Maybe these individuals have recognized and applied their strengths and preferred learning styles in the workforce. If so, perhaps this finding supports Vangsnes's (2007) assumption that "if people pursue their desired field of study based upon their learning style, then it is reasonable to assume they will also exhibit more vocation/career satisfaction than those individuals who have not" (p. 66). Further, is it possible more field-independent learners are entering the teaching ranks as opposed to field-dependent learners because much of their job requires individual effort and study (i.e., grading papers, writing lesson plans, designing rubrics) and they like to control their own structure for the learning process which occurs in the classroom?

Recommendations for Practice

While little differences existed in current employment, salary, academic advising, overall program quality, and job satisfaction when compared with GEFT learning style scores, faculty at this university can note that learning style, either randomly or programmatically, is being addressed in overall program quality and academic advising. As such, faculty should continue to assist students in learning about their preferred learning style in an effort to assist them in gauging their performance with various courses in academia as GEFT has been associated with influencing academic performance (Cano, 1999; Cano & Porter, 1997; Garton, Dauve, & Thompson, 1999; Torres, 1993; Torres & Cano, 1994).

Recommendations for Future Research

GEFT learning style was not a good predictor of job satisfaction. Therefore, further research on the relationship between learning styles and job satisfaction may not be warranted. However, Kaskiri (2006) noted numerous factors that could be used to predict one's career success, such as cognitive ability, socio-economic status, and personality factors. Perhaps these factors may better explain career satisfaction than learning style. Therefore, future research should focus on these areas to determine if they are good predictors of job satisfaction. Martin et al. (2000) called for an evaluation of workplace preparation of college graduates. If learning style is not a valuable predictor, then what is? Further investigation is warranted outside of GEFT scores to identify aspects that may be significantly related to agricultural education graduates' career satisfaction.

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