

The Effects of a Time Management Professional Development Seminar on Stress and Job Satisfaction of Beginning Agriscience Teachers in West Texas

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The purpose of this study was to determine the effects of a time management seminar on stress and job satisfaction of beginning agriscience teachers. The target population for this study consisted of agriscience teachers in the first or second year of tenure. All twenty-three (N = 23) beginning teachers from a selected region of the state participated in the study. There was a 100% response. Eleven participated in the time management seminar (n = 11) and 12 participated in the control group (n = 12). The study employed a quasi-experimental, static-group comparison design. The treatment, a comprehensive time management seminar, included: planning and scheduling, goal setting, and work and family balance. A post-test, including instrumentation for stress and job satisfaction, was administered to both groups. Independent samples t-tests revealed there were not any statistically significant differences between groups on stress levels or job satisfaction levels. However, sub-scale constructs from each instrument resulted in medium to large effect sizes in several sub-scale factors. Stress differences included work-related stress, time management, and professional investment. Job satisfaction differences included pay, recognition and advancement. Overall, the beginning teachers had slight to moderate stress. Additionally, the teachers had slightly above neutral levels of job satisfaction.

Keywords: teacher stress, time management, beginning teachers, work and family balance

Teacher shortages in our public school system have been occurring at an alarming rate (U.S. Department of Education, 2009). Some school districts employ teachers who lack proper certification due to a shortage of teacher education program graduates who decide to pursue a teaching career. As a result, struggles may occur in the quality of instruction available to students (Camp, Broyles, & Skelton, 2002).

There are national concerns about shortage and efforts involving methods to recruit and retain agriscience teachers including the National Council for Agricultural Education and the National FFA (National FFA Organization, 2009). Members of the profession have monitored the supply of available pre-service teachers. There is a reported shortage of qualified teachers (Kantrovich, 2007). Prioritizing teacher recruitment and retention must be an area of focus to attain the goals of the

profession and reflect the National Research Agenda (Doerfert, 2011).

Teachers involved in agricultural education at the secondary level often face schedules that extend well beyond a typical eight-hour work day. Professional development efforts targeting areas such as job satisfaction, stress, and time management are a reasonable approach to possible burnout, particularly with beginning teachers (McLean & Camp, 2000).

Beginning teachers in the agricultural education profession prepare for challenges in classroom management, classroom instruction or FFA activities (Roberts & Dyer, 2004a). However, research has caused other pressing issues to surface such as managing stress, balancing work and personal life, and time management (Myers, Dyer, & Washburn, 2005).

Teacher job satisfaction levels should be addressed by teacher education programs

through professional development efforts (Chaney, 2007).

Theoretical/Conceptual Framework

The Herzberg Motivation-Hygiene Theory, also described as the Two-Factor Theory, was developed by a study conducted in the 1950's (Herzberg, Mausner, & Snyderman, 1959). Herzberg defined two independent domains which determine one's level of job satisfaction with their occupation. Herzberg identified the six factors which determine job satisfaction: achievement, recognition, work itself, responsibility, advancement, and growth. These satisfaction factors were labeled *motivators* as they cause satisfaction, but are not necessarily related to dissatisfaction. The top six factors which determine dissatisfaction, or *hygiene factors*, were: company policy, supervisor, relationship with boss, working conditions, salary, and relationship with peers. The hygiene factors are basic needs of the workplace to conduct the day's activities. Herzberg's distinction between the two domains was based on Maslow's hierarchy of needs (Maslow, 1943).

Stress, defined by Maslach (1982), is the body's reaction to change which may be physical or environmental. Maslach, noted for research involving burnout, conceptually explained and identified the categorical stages one may experience including emotional exhaustion, depersonalization and reduced personal accomplishment. Working conditions, emotional or physical, cause stress. Consequently, stress ties directly to Herzberg Two-factor Theory (Herzberg et al., 1959). Elimination of stress as a solution is not possible according to Maslach. Control and prevention of becoming overstressed is the approach. The emotional levels as a result of any occupational strain could lead one to reach a level of frustration or high stress (Maslach, 1982).

Research conducted on the inservice needs of agricultural science teachers found teacher stress and time management were issues needing attention in teacher professional development (Roberts & Dyer, 2004b). The research sample consisted of both traditional and alternatively

certified teachers. Roberts and Dyer found teacher stress and time management as the largest professional development concerns among both of the sample groups.

The first year of teaching involves emotional reactions to the experience as suggested in the Phases of a First-Year Teacher (Moir, 2005). The phases were displayed as the trend of the beginning teacher through the academic calendar. The initial anticipation or elation of securing that first teaching position was followed by the anxiety of the reality of the day-to-day demands of the job. There was an increase toward a more satisfied level of agreement by the teacher as the growing pains of the break-in period begin to subside (Moir, 2005).

Education research conducted by Ingersoll (2003) reported that staffing problems will not be solved if schools do not address the sources of low teacher retention. Ingersoll found that teachers are leaving the profession for reasons such as job dissatisfaction and the pursuit of employment elsewhere. Cano and Miller (1992) conducted a gender analysis of job satisfaction and job satisfier and dissatisfier factors of agricultural education teachers in Ohio. The researchers found that male and female teachers were satisfied with their jobs. Interestingly, Cano and Miller found that the relationship for tenure and job satisfaction was significant for females. Leaving the profession due to reasons of dissatisfaction was found to lead attrition issues with females. Castillo and Cano (1999) also found that females tend to leave the profession at a greater rate than males. Gender attrition issues play a considerable role in beginning teacher retention as two studies; Burris & Keller, (2007); and Burris, McLaughlin, Brashears, & Frazee (2008); reported one half of beginning Texas teachers to be female.

The strategy used to resolve or prevent stress and conflict in the agricultural education setting may help retain some quality teachers (Croom, 2003). Croom concluded that as teachers gain experience teaching, they cope well to alleviate work-related stress. Stress-causing agents of the workplace, such as time demands, have appeared to be a surprise to

beginning teachers. According to Walker, Garton, and Kitchel (2004), assignments on campus are a surprise reality for new teachers at the secondary level. Moreover, a bad experience while student teaching may prevent many university graduates from entering teaching altogether (Osborne, 1992).

The factors which determine dissatisfaction and stress must be addressed taking a professional development approach (Walker et al., 2004). Torres, Lawver, and Lambert (2009) conducted a study on job-related stress and found that hours per week at work was the largest predictor of stress. Agriscience teachers have reported professional development needs in time management as indicated by research identifying problems facing the profession (Myers et al., 2005). Myers et al. identified 11 major issues facing beginning teachers including work-life balance, lack of preparation time, and time management.

Time management strategies have been examined mostly in settings outside of education. Macan (1996) conducted a study comparing the effect of time management training on time behaviors, attitudes and job performance. Macan concluded that there was not a significant change in job performance, job satisfaction, or job tension. However, there was an increased perception of having more control over time in the group receiving the time management training

According to a national new teacher study involving general education, time management needs surfaced among young professionals. Meister and Melnick (2003) concluded that 84% of the teachers reported feeling “overwhelmed by the workload” and that “time management is another area where teacher preparation programs need a greater focus” (p. 92).

Purpose, Objectives, and Hypotheses

The purpose of this study was to determine the effects of a time management professional development seminar on job satisfaction and stress of beginning agriscience teachers in West Texas. The following research objectives were used to conduct this study:

1. Describe the characteristics of beginning agriscience teachers.
2. Describe the level of stress of beginning agriscience teachers.
3. Describe the level of job satisfaction of beginning agriscience teachers.
4. Determine differences between participants and non-participants on level of stress and level of job satisfaction.

As a means of accomplishing the objectives, the following null hypotheses were tested:

1. H_0 : There is no difference in scores on stress for teachers receiving the time management professional development and those not receiving the time management professional development.
2. H_0 : There is no difference in scores on job satisfaction for teachers receiving the time management professional development and those not receiving the time management professional development.

Methods/Procedures

This study was a quasi-experimental, static-group comparison design (Gall, Gall, & Borg, 2003). According to Gall et al., the static-group comparison design involves non-random assignment to treatment and there is only a post-test administered. Limitations of this study include that the static-group comparison design does not control for threats due to individual subject characteristics. Since the pre-test component is lacking, it is not possible to control for the two groups’ similarities or differences prior to the treatment (Fraenkel & Wallen, 2006). Additionally, this study consists of a regional sample from the university service region. Caution should be taken when interpreting the findings beyond the scope of this study.

The target population for this study consisted of secondary agricultural science instructors in the first or second year of teaching. Subjects were chosen based on geographical region which allowed for voluntary participation by the subjects and for safe travel. There were 500 miles north to south and 480 miles east to west respectively in the region. The names of

the teachers were obtained from the professional association membership data (updated annually) which included years of tenure. The accuracy of the list obtained from the professional association was confirmed by visiting the individual school district web-based information, email, and telephone contacts. There was a total of 204 ($N = 204$) beginning teachers in the state. There was a total of 23 ($n = 23$) beginning teachers in selected region. The researchers utilized a census of beginning teachers from the region in the study.

The researchers presented the treatment at the conclusion of the fall semester (December), the low point of the Phases of a First Year Teacher (Moir, 2005). The participants voluntarily participated in the time management seminar. Eleven ($n = 11$) of the beginning teachers in the region received the treatment, a seven hour seminar. The treatment occurred in a university classroom and involved a curriculum consisting of three learning outcomes including: planning and scheduling, goal setting, and personal time. Following the treatment, the remaining 12 ($n = 12$) instructors were assigned to the control group for comparison on the post-test data. The instrumentation occurred at the final reporting period of the school year in April and May. The Teacher Stress Inventory (TSI) was used to measure the stress levels (Fimian, 1984). The Teacher Job Satisfaction Questionnaire (TJSQ) was the instrument used to measure job satisfaction (Lester, 1987).

Fimian and Fastenau (1990) defined the ten factors of the 49-item TSI: *Professional stress* is how teachers see themselves as professionals. *Behavioral manifestations* are inappropriate ways to deal with stress. *Time management* is the "balancing act" related to teaching. *Discipline and motivation* are aspects of the teacher-student relationship. *Emotional manifestations* are ways that teachers respond emotionally to stress. *Work-related stress* consists of environment-specific events that are sources of stress. *Gastronomical manifestations* are stomach ailments related to stress. *Cardiovascular manifestations* are cardiovascular problems associated with stress. *Fatigue manifestations* are fatigue problems associated with stress. Participants rated each

statement on a five-point scale: 1) *not noticeable*, 2) *barely noticeable*, 3) *moderately noticeable*, 4) *very noticeable* and 5) *extremely noticeable* (Lester & Bishop, 2000).

Lester (1987) defined the nine factors of the 77-item Teacher Job Satisfaction Questionnaire (TJSQ): *Supervision* is the supervisory style, task-oriented or person-oriented. *Colleagues* consist of the teaching group and social aspects. *Working conditions* are the physical conditions of the work environment. *Pay* is the annual income which may be an indicator of recognition and achievement. *Responsibility* is the desire to be accountable for one's work or to take part in policy or decisions. *Work itself* is the job of teaching and related tasks. *Advancement* is change in status or position, and may include a salary increase. *Security* refers to job security. *Recognition* refers to appreciation, prestige, and esteem. Rated statements follow a 5-point scale: 1 (*Strongly Disagree*), 2 (*Disagree*), 3 (*Neutral*), 4 (*Agree*), and 5 (*Strongly Agree*) (Lester & Bishop, 2000).

Reliability was reported in a study on 10-year aggregate data collected by the TSI author (Fimian & Fastenau, 1990). The Cronbach's alpha coefficients were greater than 0.75 and overall TSI alpha coefficient of 0.93. Fimian and Fastenau conducted factor analyses on the TSI to refine the instrument. A Cronbach's alpha coefficient for the entire TJSQ instrument was 0.93. The nine factors of the TJSQ reported alpha coefficients greater than 0.71. The authors also conducted factor analyses of the original instrument which determined the nine-factors of the TJSQ. The content validity of the TJSQ was determined by a panel of experts where the original instrument was analyzed (Lester & Bishop, 2000).

The instrumentation involved web-based questionnaires. Collection of data followed the procedures according to Dillman's (2007) tailored design method. The internet links accompanied by instructions were sent to participants along with an explanation of confidentiality of their response. The timeline of the data collection transpired through the month of April. The researchers obtained a 100 percent response rate.

The descriptive data regarding the teachers and the workplace included frequencies and percentages. Mean scores, and standard deviations were used to analyze data which measured stress levels of the 23 ($n = 23$) agriscience teachers. Mean scores, ranges and standard deviations were used to analyze the data on job satisfaction of the beginning teachers ($n = 23$). Negative statements were recoded in order to obtain the summative scores for the data. The two null hypotheses were tested using independent samples t -tests to compare the two groups' mean scores on the TSI and the TJSQ. The summated scores for the TSI and the TJSQ provided the means and standard deviations for the independent samples t -tests. The alpha level, which was established by the researcher *a priori*, was set at 0.05 ($\alpha = .05$). Effect size was also calculated using the means and standard deviations to determine the Cohen's d coefficient.

Findings/Results

Research Objective 1

Research objective 1 was to describe the characteristics of beginning agriscience teachers. Table 1 displays the demographic data of the beginning agriscience teachers in the study. The participants in the seminar consisted of one third females and two-thirds males. The control group consisted of a higher representation of males and only two females. Ethnicity among the subjects consisted of only one demographic,

white, 100% for both groups (see Table 1). Eight of the teachers were single, never been married. The married teachers represented almost two-thirds of the participants in the study. One of the teachers reported their marital status as divorced.

The instrument requested number of teachers, and contract length from the agriscience teachers (see Table 1). The majority of the subjects taught in single-teacher agriscience programs. The remaining teachers taught in two-teacher programs. The participant group consisted of one-teacher programs and two-teacher programs. Non-participants were made up of two-thirds one-teacher and one-third two-teacher programs. Contract length ranged from 10-month contracts to 12-months in length. The four contract terms consisted of 10-month (187 days), 11-month (207 days), 11 ½ -month (216 days) and 12-month (226 days). Agriscience teachers were mostly on 11-month or 12-month contracts with 43.5% ($n = 10$) and 39.1% ($n = 9$) respectively. The treatment group was similar with 11-month or 12-month contracts respectively consisting of 45.4% ($n = 5$) 36.4% ($n = 4$) of the participants. The control group reported 11 or 12-month contract lengths with 41.7% ($n = 5$) and 41.7% ($n = 5$) respectively. Teachers were asked to provide the total unduplicated enrollment (see Table 2). The overall mean was 75.08. Seminar participants reported a mean of 96.36 students. The non-participant group reported a mean of 55.58.

Table 1

Summary of Demographic Data of Beginning Teachers by Treatment Level

Demographic	Participants (n = 11)		Non-participants (n = 12)		Total (N = 23)	
	f	%	f	%	f	%
Gender						
Female	4	36.4	2	16.7	6	26.1
Male	7	63.6	10	83.3	17	73.9
Ethnicity						
White	11	100.0	12	100.0	23	100.0
Marital Status						
Single	4	36.4	4	33.3	8	34.8
Married	7	63.6	7	58.3	14	60.9
Divorced	0	0.0	1	8.3	1	4.3
Number of Children						
0	9	81.8	7	58.3	16	69.6
1	2	18.2	2	16.7	4	17.4
2	0	0.0	3	25.0	3	13.0
Number of Teachers						
1	6	54.5	8	66.6	14	60.9
2	5	45.5	4	33.3	9	39.1
Contract Length						
10 mo.(187 days)	0	0.0	2	16.7	2	8.7
11 mo.(207 days)	5	45.4	5	41.7	10	43.5
11 ½ mo.(216 days)	2	18.2	0	0.0	2	8.7
12 mo. (226 days)	4	36.4	5	41.7	9	39.1
Which best describes your vehicle situation?						
I drive my own; no allowance/fuel.	0	0.0	1	8.3	1	4.3
I drive my own; monthly allowance.	1	9.1	2	16.7	3	13.0
I drive my own; vehicle allowance and out-of-district mileage.	1	9.1	0	0.0	1	4.3
The school provides vehicle & fuel.	9	81.8	9	75.0	18	78.3

Table 2

Agriscience Student Enrollment

Enrollment	Participants (n = 11)		Non-participants (n = 12)		Total (N = 23)	
	M	SD	M	SD	M	SD
Number of Students	96.36	59.76	55.58	26.43	75.08	49.08

Research Objective 2

Research objective 2 was to describe the level of stress of beginning agriscience teachers. There were ten factors or constructs in measuring the level of stress.

The stress level was measured by the 49-item Teacher Stress Inventory (TSI). (See Table 3.) The grand mean for the beginning agriscience teachers on the TSI was $M = 2.71$ ($SD = .57$). Therefore, the overall stress is *barely to moderately noticeable* stress. Discipline and Motivation, Time Management and Work-Related Stressors measured above the *noticeable* level on the five-point scale.

Research Objective 3

Research objective 3 was to describe the level of job satisfaction of beginning agriscience teachers. The beginning agriscience teachers were measured by the 77-item Teacher Job Satisfaction Questionnaire (TJSQ). The TJSQ data by factor means are illustrated in Table 4. Summated scores were analyzed and means and standard deviations were reported by factor. The overall grand mean for the TJSQ for the teachers was 3.38. This range of job satisfaction is from neutral to agree on the five-point scale. The Advancement mean for the beginning agriscience teachers was 3.07. Recognition mean score for beginning teachers was 2.81. Pay produced a mean of 2.67. Disagreement with job satisfaction statements ranged from 1 (*strongly disagree*) to 3 (*neutral*) on the five-point scale.

Table 3

TSI Mean and Standard Deviation by Stress Factor

TSI Factor	Total ($N = 23$)		
	<i>M</i>	<i>SD</i>	Rank
Discipline and Motivation	3.56	0.79	1
Time Management	3.47	0.67	2
Work-Related Stressors	3.13	0.61	3
Professional Stress	2.85	0.86	4
Fatigue Manifestations	2.68	1.05	5
Professional Investment	2.53	0.77	6
Emotional Manifestations	2.44	1.05	7
Cardiovascular Manifestations	2.07	1.08	8
Gastronomical Manifestations	1.82	1.08	9
Behavioral Manifestations	1.45	0.42	10

Note. 1 = Not Noticeable; 2 = Barely Noticeable; 3 = Moderately Noticeable; 4 = Very Noticeable; 5 = Extremely Noticeable.

Table 4

TJSQ Mean Score Rankings by Treatment

TJSQ Factor	Total (N = 23)		
	<i>M</i>	<i>SD</i>	Rank
Responsibility	3.96	0.43	1
Security	3.75	0.71	2
Work Itself	3.62	0.47	3
Colleagues	3.57	0.71	4
Supervision	3.50	0.69	5
Working Conditions	3.32	0.51	6
Advancement	3.07	0.81	7
Recognition	2.81	0.49	8
Pay	2.67	0.67	9

Note. 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

Research Objective 4

Research objective 4 was to determine differences between participants and non-participants on level of stress and level of job satisfaction.

To test null hypothesis one, the summated mean scores on the TSI were compared between the treatment group and the non-treatment group. The researchers compared the equality of means of the summated scores of the TSI using an independent samples *t*-test, with an alpha level established *a priori* at 0.05 ($\alpha = .05$).

According to Kirk (1982), the *t*-test is used to test a null hypothesis when comparing means of two groups. The range of the mean for the participants was 1.50 to 3.83. Non-participants mean scores ranged from 1.41 to 3.30. Mean scores for summated items on the TSI were 142.80 ($SD = 25.93$) for the treatment group and 122.40 ($SD = 27.74$) for the control group. There was not a significant difference, $t(18) = -1.69$, $p = .11$, between the groups on the mean scores analyzed using the TSI summated items ($p > .05$). Table 5 displays findings of the independent samples *t*-test from the TSI scores.

Table 5

Independent Samples t-test - Mean Scores of Beginning Teacher Stress

Treatment Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Participants	10	142.80	25.93	-1.69	0.11
Non-Participants	10	122.40	27.74		

Note. Data were missing for three participants (one item each). As a result, subjects were not included in the independent samples *t*-test according to SPSS.

To further compare the ten subscale factors of the TSI, effect size for differences in stressors and stress manifestation factors was measured using the treatment group and control group means, standard deviations, and Cohen's *d* coefficients. Thalheimer and Cook (2002) suggested the relative size of Cohen's *d* to

measure effect size for practical differences. The TSI ten factor means and standard deviations by treatment group were analyzed and compared. Table 6 displays the means, standard deviations and effect size for the ten TSI factors.

Cohen’s *d* coefficients determined large effect sizes for professional investment ($d = .92$) and emotional manifestations ($d = .83$). Medium effect sizes resulted in time management ($d = .40$), discipline and motivation ($d = .72$), work-related stress ($d = .66$), fatigue manifestations ($d = .53$) and professional stress ($d = .74$).

To test null hypothesis two, the mean scores on the TJSQ were compared between the treatment group and the non-treatment group. The researchers compared the means of the groups, the participants and non-participants using an independent samples *t*-test, the alpha level set at 0.05 ($\alpha = .05$). Table 7 illustrates the findings of the independent samples *t*-test for job satisfaction (TJSQ).

Table 6

A Comparison of Teacher Stress Factors, Effect Size by Treatment

TSI Factor	Participants <i>n</i> = 11		Non-Participants <i>n</i> = 12		Effect Size	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Cohen’s <i>d</i>	Effect
Professional Investment	2.86	0.81	2.22	0.62	0.92	Large
Behavioral Manifestations	1.50	0.41	1.41	0.44	0.20	Small
Time Management	3.61	0.73	3.35	0.63	0.40	Medium
Discipline and Motivation	3.83	0.96	3.30	0.51	0.72	Medium
Emotional Manifestations	2.85	0.96	2.06	1.02	0.83	Large
Work-Related Stressors	3.33	0.60	2.95	0.59	0.66	Medium
Gastronomical Manifestations	1.63	0.78	2.00	1.31	0.35	Small
Cardiovascular Manifestations	2.09	1.16	2.05	1.05	0.03	Negligible
Fatigue Manifestations	2.96	0.85	2.43	1.18	0.53	Medium
Professional Stress	3.14	0.87	2.56	0.77	0.74	Medium

Table 7

Independent Samples *t*-test - Mean Scores of Beginning Teacher Job Satisfaction

Treatment Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Participants	11	218.00	23.36	1.10	0.28
Non-Participants	10	228.60	20.36		

Note. Data were missing for two participants (single items only). As a result, subjects were not included in the independent samples *t*-test.

The range of the mean for the participants was 2.61 to 3.95. Non-participants mean scores ranged from 2.72 to 3.96. Mean scores for summated items on the TJSQ were 218.00 ($SD = 23.36$) for the treatment group and 228.60 ($SD = 20.36$) for the control group. There was not a significant difference, $t(19) = 1.10$, $p = .28$, between the groups on the mean scores analyzed using the TJSQ summated items ($p > .05$).

To compare the nine individual subscale factors of the TJSQ, effect size for differences in job satisfaction factors was measured using the treatment group and control group means, standard deviations, and Cohen’s *d* coefficients. Table 8 illustrates the means, standard deviations, and effect size of the nine comparisons for the TJSQ.

Table 8

A Comparison of Teacher Job Satisfaction Factors, Effect Size by Treatment

TJSQ Factor	Participants		Non-Participants		Effect Size	
	<i>n</i> = 11		<i>n</i> = 12		Cohen's <i>d</i>	Effect
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Supervision	3.33	0.83	3.50	0.56	0.25	Small
Colleagues	3.45	0.74	3.68	0.68	0.35	Small
Working Conditions	3.27	0.62	3.38	0.41	0.22	Small
Pay	2.61	0.77	2.72	0.60	0.18	Small
Responsibility	3.95	0.50	3.96	0.39	0.03	Negligible
Work Itself	3.46	0.39	3.81	0.51	0.80	Large
Advancement	2.78	0.94	3.35	0.59	0.76	Large
Security	3.57	0.61	3.91	0.79	0.50	Medium
Recognition	2.72	0.35	2.88	0.59	0.34	Small

A large effect size was determined by the Cohen's *d* coefficients for work itself ($d = 0.80$) and advancement ($d = 0.76$). Medium effect size was determined for security ($d = 0.50$). The remaining factors were found to have small or negligible size.

Conclusions, Implications, and Recommendations

Although this study included a census of the beginning teachers in the selected region, it was a fairly small group in comparison to the entire state. Caution should be taken when making any inferences beyond the scope of this study.

Most of the beginning teachers, or approximately three-fourths, are male. One-third of the teachers were single and had never been married. Married teachers consisted of almost two-thirds and one teacher was divorced. Most of the agriscience teachers reported having no children. Although the majority of this study's participants are male, one fourth of the beginning teachers in this region were female, a suggestion that females are an increasing concern for work and family balance in the agriscience teaching role. Burris et al. (2008) reported half of the Texas beginning teachers were female. The work and family balance retention issues with females may differ from the same issues with male teachers (Castillo & Cano, 1999). The ethnicity of the beginning teachers (100% white, non-Hispanic) may be

interpreted that there is a possible diversity issue in agricultural education.

Most of the beginning agriscience instructors are on extended contracts of 11 or 12 months in length. However, 100% of the treatment group was on the extended contract compared to 83.4% of the control group. The treatment group mean for student enrollment was double compared to the control group. This finding shares similarities with the study conducted by Myers et al. (2005) whose findings included classroom and FFA program management as needs to be addressed for induction teachers. The teacher contract length information implies that there are additional time requirements based on program activities, extended summer responsibility, and other demands outside of the classroom. The enrollment difference between groups implies that the treatment group was possibly seeking assistance to manage time requirements. The observation suggests that higher student enrollment may lead to more work load and time demands of the agriscience teacher.

The beginning teachers are considered to have low to moderate stress. This finding is consistent with Croom & Moore (2003) who found a moderate level of emotional exhaustion. There were factors which cause dissatisfaction according to Herzberg's Two-Factor Theory (Herzberg et al., 1959). Three of the TSI factors were *moderate to very noticeable*, ranked from highest to lowest, were: discipline and

motivation, time management, and work-related stress. These findings coincide with Mundt and Connors (1999), Meister & Melnick (2003) and Roberts and Dyer (2004b) who found time demands and work load are concerns for beginning teachers. This mid-range level of stress for beginning teachers may not sound alarming. However, in order for the stress mean score to fall in the middle range, mathematically, there were some concerns from beginning teachers which were rated on the *very noticeable* range of the stress index. Time management was one factor where beginning teachers may need assistance.

Job satisfaction of beginning teachers ranged from neutral to slight job satisfaction. This finding concurs with Cano and Miller (1992) and Castillo and Cano (1999). Both studies concluded teachers in Ohio reported mid-range levels of job satisfaction. The three TJSQ factors ranging from lowest disagreement level toward agreement included: pay, recognition, and advancement. Pay is a hygiene factor (causes dissatisfaction) and recognition and advancement are motivators (cause satisfaction) according to the Two-Factor Theory (Herzberg et al., 1959). The job satisfaction factors imply that some beginning teachers are experiencing disillusionment. The teachers were not dissatisfied with work, but also did not appear to be very satisfied. Walker et al. (2004) as well as Chaney (2007) found reasons for attrition as teachers being fairly satisfied but leaving for factors which could not be met by teaching.

There was not a statistically significant difference in stress levels between the two groups. Professional investment and emotional manifestation were two TSI factors which had practical differences among the treatments with large effect sizes. Medium effect sizes indicated differences between treatment groups in time management, discipline and motivation, and work-related stress. These minor differences may imply the treatment groups in this study do have differing psychological, pedagogical, and emotional needs.

There is not a statistically significant difference in job satisfaction levels between the two treatment groups. Macan (1996) concluded

there was not an effect on work performance, attitude and behavior after time management training, but the subjects did feel more control of their time. A large effect size indicating practical differences was determined for work itself and advancement. Medium effect size was determined for security. There is a possibility there were existing confounding variables such as student enrollment or personal demographics which lead the practical differences on the individual constructs of each instrument. Granted, the differences between the groups were not statistically significant. There is an implication that those actively seeking professional development are different than those who do not.

It is recommended that stress, job satisfaction, and time management research, which controls for gender, be conducted (Chaney, 2007). Additionally, gender roles on work and family balance among agricultural science teachers should be explored similar to the study conducted by Cano and Miller (1992). Scholarly efforts in work and family balance should coincide with the national retention efforts in the profession including the National Research Agenda (Doerfert, 2011) research priorities and the National Council for Agricultural Education, along with profession goals of encouraging students to teach secondary agricultural science.

Secondly, there is a need to explore ethnicity and gender distribution in secondary agricultural education. Research involving recruitment and retention of university teacher education programs should examine the levels of diversity among agricultural education student populations along with intentions of entering the teaching profession.

As a result of the limitations of this study, it is recommended to replicate this study and involve random assignment and a larger sample size of induction teachers. Research studies should control for differences such as student enrollment and gender among the sample prior to measuring stress and job satisfaction. As a result of this study's limitations, pre-test methodologies are highly encouraged. Although this study included a census from the designated region, quasi-experimental research is needed

which includes a sample of the population which is representative of secondary agriscience teachers across the state.

This study only involved first and second-year teachers, further research is recommended to include agriscience teachers of varying tenure. Work and family balance, particularly among teachers in years one through five of teaching

should be included in the investigation regarding the agriscience teachers. Additionally, investigations of stress levels and job satisfaction should occur which would involve comparisons between agriscience teachers and other secondary education professionals with abundant workloads.

References

- Burris, S., & Keller, J. (2007). Professional roles and responsibilities: Challenges for induction teachers. *Journal of Agricultural Education*. 49(2), 118-129. doi: 10.5032/jae.2008.02118
- Burris, S., McLaughlin, E. K., Brashears, T., & Frazee, S., (2008). Personal teaching efficacy, general teaching efficacy and content efficacy: A comparison of first and fifth year agriculture teachers. *Proceedings of the 2008 Western Region AAAE Research Conference*. 27, 142 – 153.
- Camp, W. G., Broyles, T., & Skelton, N. S. (2002). *A national study of the supply and demand for teachers of agricultural education*. Blacksburg, VA: Agricultural and Extension Education College of Agricultural and Life Sciences Virginia Polytechnic Institute and State University.
- Cano, J., & Miller, G. (1992). A gender analysis of job satisfaction, job satisfier factors, and job dissatisfier factors of agricultural education teachers. *Journal of Agricultural Education*. 33(3), 40-46.
- Castillo, J. X., & Cano, J. (1999). A comparative analysis of Ohio agriculture teachers' level of job satisfaction. *Journal of Agricultural Education*. 40(4), 67-79. doi: 10.5032/jae.1999.04067
- Chaney, C. A. R. (2007). *Work-life variables influencing attrition among beginning agriscience teachers of Texas*. Unpublished dissertation, Texas Tech University.
- Croom, B. (2003). Teacher burnout in agricultural education. *Journal of Agricultural Education*. 44(2), 1-13. doi: 10.5032/jae.2003.02001
- Croom, B., & Moore, G. E. (2003). The relationship between teacher burnout and student misbehavior. *Journal of Southern Agricultural Education Research*. 53(1), 262-274.
- Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method*. (2nd ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.
- Fimian, M. J. (1984). The development of an instrument to measure occupational stress in teachers: The teacher stress inventory. *Journal of Occupational Psychology*. 57, 277-293.
- Fimian, M. J., & Fastenau, P. S. (1990). The validity and reliability of the Teacher Stress Inventory: A re-analysis of data. *Journal of Organizational Behavior*. 11, 151-157.
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (6th ed.). New York, NY: McGraw-Hill Companies, Inc.
- Gall, M. D., Gall, J. P. & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). Boston, MA: Pearson Education, Inc.

- Herzberg, F., Mausner, B., & Snyderman, B. B., (1959). *The motivation to work*. (2nd ed.). New York, NY: John Wiley Sons.
- Ingersoll, R. M. (2003). *Is there really a teacher shortage?* A research report co-sponsored by the Center for the Study of Teaching and Policy and the Consortium for Policy Research in Education.
- Kantrovich, A. J. (2007). *A national study of the supply and demand for teachers of agricultural education from 2004-2006*. Morehead, KY: Morehead State University.
- Kirk, R. E. (1982). *Experimental design: Procedures for the behavioral sciences* (3rd ed.). Pacific Grove, CA: Brooks/Cole Publishing Co.
- Lester, P. E. (1987). Development and factor analysis of the teacher job satisfaction questionnaire (TJSQ). *Educational and Psychological Measurement*. 47(1), 223-233.
- Lester, P. E., & Bishop, L.K. (2000). *Handbook of tests and measurements in education and the social sciences*. (2nd ed.). Lanham, MD: The Scarecrow Press, Inc.
- Macan, T. H. (1996). Time-management training: Effects on time behaviors, attitudes, and job performance. *The Journal of Psychology*. 130(3), 229-236.
- Maslach, C. (1982). *Burnout: The cost of caring*. Englewood Cliffs, NJ: Prentice Hall.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review* (50), 370-396.
- McLean, R. C., & Camp, W. G. (2000). An examination of selected pre-service agricultural teacher education programs in the U.S. *Journal of Agricultural Education*. 41(2), 25-35. doi: 10.5032/jae.2000.02025
- Meister, D. G., & Melnick, S. A. (2003). National new teacher study: Beginning teachers' concerns. *Action in Teacher Education*. 24 (4), 87-94.
- Moir, E. (2005). California formative assessment and support system for teachers (CFASST). Training for support providers, year 1. Participant's manual. October, 2005.
- Mundt, J. P., & Connors, J. J. (1999). Problems and challenges associated with the first years of teaching agriculture: A framework for pre-service and inservice education. *Journal of Agricultural Education*. 40 (1), 38-48. doi: 10.5032/jae.1999.01038
- Myers, B. E., Dyer, J. E., & Washburn, S. G. (2005). Problems facing beginning agriculture teachers. *Journal of Agricultural Education*. 46 (3), 45-55. doi: 10.5032/jae.2005.03047
- National FFA Organization (2009). *FFA Facts and Statistics. Education*. Retrieved January 19, 2009, from http://www.ffa.org/index.cfm?method=c_about.stats
- Osborne, E. (1992). A profession that eats its young. *Agricultural Education Magazine*. 64 (12), 3-4.
- Roberts, T. G., & Dyer, J. E. (2004a). Characteristics of effective agriculture teachers. *Journal of Agricultural Education*. 45(4), 82-95. doi: 10.5032/jae.2004.04082
- Roberts, T. G., & Dyer, J. E. (2004b). Inservice needs of traditionally and alternatively certified agriculture teachers. *Journal of Agricultural Education*. 45(4), 57-70. doi: 10.5032/jae.2004.04057
- Thalheimer, W., & Cook, S. (2002). How to calculate effect sizes from published research: A simplified methodology. Retrieved May 28, 2009 from: <http://www.workinglearning.com/Catalog/index.htm> .

Torres, R. M., Lawver, R. G., & Lambert, M. D. (2009). An investigation of job-related stress among secondary agricultural education teachers in Missouri and North Carolina. *Proceedings of the 2009 American Association for Agricultural Education Research Conference, Louisville, KY (May 20-22, 2009)*. 601-614.

United States Department of Education. (2009). Teacher shortage areas nationwide listing 1990-91 thru 2009-10. Office of Postsecondary Education Policy & Budget Development Staff.

Walker, W. D., Garton, B. L., & Kitchel, T. J. (2004). Job satisfaction and retention of secondary agriculture teachers. *Journal of Agricultural Education*. 45(2), 28-38.

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