

# ASSESSING TEACHER SELF-EFFICACY AND JOB SATISFACTION OF EARLY CAREER AGRICULTURE TEACHERS IN KENTUCKY

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## Abstract

*The United States is currently facing a shortage of qualified teachers; specifically, agricultural education has recorded shortages for several years. A high percentage of agriculture teachers will leave the profession well before retirement. Those teachers who leave the profession are often dissatisfied with their chosen career and exhibit low levels of teacher self-efficacy and job satisfaction. The purpose of this census study was to describe the current level of teacher self-efficacy and job satisfaction among all early career agriculture teachers (within the first 6 years in the profession) in Kentucky (N = 80) and to determine if a relationship existed between teacher self-efficacy and job satisfaction among these teachers. Teacher self-efficacy was measured through three constructs: student engagement, instructional practices, and classroom management. Early career agriculture teachers in Kentucky are efficacious and satisfied with teaching. A variety of relationships exist between each construct and overall job satisfaction between each group of teachers.*

## Introduction/Theoretical Framework

According to the National Education Association (NEA; as cited in Walker, Garton & Kitchel, 2004, p. 1), the United States is “facing the worst teacher shortage ever”. This shortage could worsen. The NEA (n.d., p. 1) stated in *Attracting and Keeping Quality Teachers* that “more than a million veteran teachers are nearing retirement...and we will need more than two million new teachers in the next decade”. Recruiting potential teachers to fill these vacancies will be a challenge for teacher education programs.

In general, teaching has a higher turnover rate than other occupations (Ingersoll, 2002). The National Center for Educational Statistics (NCES; n.d.) stated that there was a 16% rate of teacher turnover between the 1999-2000 and 2000-2001 school years. Almost half the turnover was attributed to teachers moving to another district or retiring. However, more than half of the remaining teachers left the teaching profession altogether (NCES).

Agricultural Education has not escaped the phenomenon of teacher shortage. Camp, Broyles, and Skelton (2002) noted a shortage of agriculture teachers as early as 1965. This shortage has continued since that time (Kantrovich, 2007). Camp et al. compared the supply of newly certified agriculture teachers from teacher education programs with the demand for agriculture teachers. An adequate supply of newly qualified agriculture teachers exists to fill needed replacements, but a shortage of agriculture teachers in public schools remains. Camp et al. concluded that the reason teacher shortages persist is because not all qualified teachers enter the teaching profession. Nearly one-fourth of newly qualified teachers chose not to enter the teaching profession in 2001.

Solving the shortage of agriculture teachers has evolved into the same two schools of thought that the majority of education has followed. The first is recruiting additional potential teachers, and the second is retaining current teachers. Although recruitment of new teachers is extremely important, it appears additional

focus needs to be placed on understanding the factors that influence teachers to leave the teaching profession. Retaining teachers in the profession possesses “the greatest potential for decreasing the teacher shortage” (Walker, 2002, p. 2).

Nearly half of all beginning teachers leave the profession within their first 7 years (Marso & Pigge, 1997; Wilkinson, 1994). Walker (2002) found 42% of Missouri agriculture teachers left teaching by their 6th year. Understanding factors that lead to attrition by the 6th year is crucial to retaining teachers in the profession longer. One possible factor to consider is teacher self-efficacy. Teacher self-efficacy is “the teacher’s belief in his or her own capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran, Woolfolk-Hoy, and Hoy, 1998, p. 223).

Prior research has suggested teachers who leave the teaching profession are less efficacious than those who remain in the profession (Glickman & Tamashiro, 1982). Teacher self-efficacy has also been linked to novice agriculture teachers’ commitment to the teaching profession (Knobloch & Whittington, 2003). Novice teachers who are more efficacious tend to have a greater commitment to teaching than those who are not as efficacious and thus are more motivated to remain in the teaching profession (Whittington, McConnell, & Knobloch, 2003). In fact, novice teachers could have an inflated sense of self-efficacy because of their student teaching experience (Knobloch, 2006).

In addition to teacher self-efficacy, prior research has also suggested there is a difference in level of job satisfaction between those agriculture teachers who leave teaching and those who remain in the profession (Bennet, Iverson, Rohs, Langone, & Edwards, 2002). Garton and Robinson (2006, p. 553) stated, “Job satisfaction plays an important role in determining whether or not graduates remain in their chosen career.” Teachers who feel more satisfied with teaching appear to remain in the teaching profession longer than those who feel dissatisfied.

The theoretical framework employed for this study was Bandura’s (1977) Self-Efficacy Theory. Bandura (1993, p. 118) stated, “efficacy beliefs influence how people feel, think, motivate themselves, and behave.” Self-efficacy aids individuals in succeeding at tasks (Bandura, 1993). Although knowledge and skills are required, Bandura reported those requirements are not necessary to guarantee success. Two people may have similar educational backgrounds and skills, but one may not succeed at a similar task because of a difference in level of self-efficacy.

Bandura (1994) stated there are four main sources that influence a person’s self-efficacy: mastery experiences, vicarious experiences, social (verbal) persuasion, and somatic and emotional states in judging one’s capabilities (physiological arousal). Mastery experiences are the most effective source of efficacy and exist when individuals succeed at performing tasks. Vicarious experiences involve observing the successes of others (models) similar to oneself. However, observing the failures of others (models) similar to oneself may decrease self-efficacy. The third source, social (verbal) persuasion, can be influenced if told by others that they “have what it takes to succeed” (Bandura, 1994, p. 3). Self-efficacy can also be diminished if told by others they do not possess the skills for success. It is far easier for social (verbal) persuasion to decrease self-efficacy than increase it (Bandura, 1994). The final source, somatic and emotional states in judging one’s capabilities, is how people react to situations, whether physical or mental. “Somatic indicators of personal efficacy are especially relevant in domains that involve physical accomplishments, health functioning, and coping with stressors” (Bandura, 1997, p. 106). Relieving stress and enhancing physical status aids in increasing self-efficacy (Bandura, 1997).

Based on Bandura’s (1977) Self-Efficacy Theory, Tschannen-Moran et al. (1998) offered a revised definition for teacher self-efficacy in an attempt to provide clarity: “the teacher’s belief in his or her own capability to organize and execute courses of action required to successfully

accomplish a specific teaching task in a particular context”; also, “both self perception of teaching competence and beliefs about the task requirements in a particular teaching situation contribute to teacher self-efficacy” (Tschannen-Moran et al., p. 223). They also noted teacher self-

efficacy is context specific: “Teachers feel efficacious for teaching particular subjects to certain students in specific settings...” (p. 227). Tschannen-Moran et al. conceptualized teacher self-efficacy through Bandura’s (1977) Self-Efficacy Theory (Figure 1).

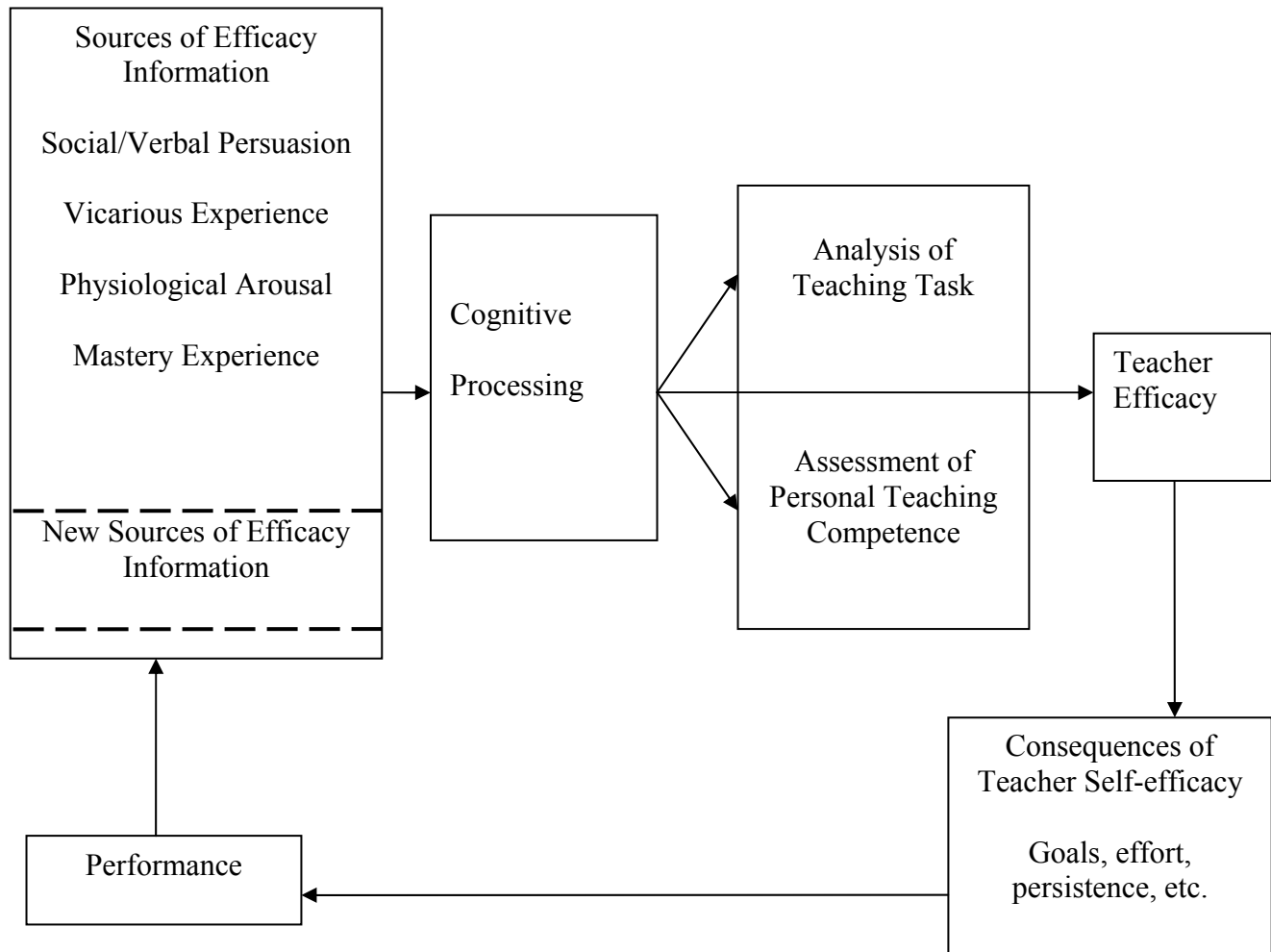


Figure 1. The cyclical nature of teacher self-efficacy.

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This model indicated teacher self-efficacy begins with the four sources of efficacy: mastery experiences, vicarious experiences, social/verbal persuasion, and physiological arousal. The teacher then processes and analyzes the teaching task. Teacher competence in each specific teaching task is also analyzed. The teacher analyzes “personal capabilities such as

skills, knowledge, strategies, or personality traits balanced against personal weaknesses or liabilities in this particular teaching context” (Hoy & Miskel, 2005, p. 154). This leads to teacher self-efficacy and the consequences surrounded by efficacy. These consequences of self-efficacy can include goal setting, motivation to achieve goals, and persistent effort in the face of

challenges. Performance is the next step of the model, which, in turn, leads to new sources of efficacy, continuing the cycle. Teachers with greater efficacy will persist and exert greater effort in the face of challenges, which leads to superior performance (Hoy & Miskel). Superior performance then leads to greater efficacy.

With the shortage of agriculture teachers nationwide, understanding the current level of teacher self-efficacy and job satisfaction among early career agriculture teachers is crucial. As a result, a major question that arose from the review of literature was: Is there a relationship between teacher self-efficacy and job satisfaction among early career agriculture teachers in Kentucky?

### Purpose and Objectives

The purpose of this census study was to describe the current level of teacher self-efficacy and job satisfaction among all early career agriculture teachers (within the first 6 years of teaching) in Kentucky ( $N = 80$ ) and to determine if a relationship existed between teacher self-efficacy and job satisfaction among these teachers.

The following research objectives guided this study:

1. Describe selected demographic characteristics of early career agriculture teachers (age, gender, and years of teaching experience) in Kentucky by years in the profession.
2. Describe the current level of teacher self-efficacy (student engagement, instructional practices, and classroom management) of early career agriculture teachers in Kentucky by years in the profession.
3. Describe the current level of job satisfaction of early career agriculture teachers in Kentucky by years in the profession.
4. Explain the relationship between teacher self-efficacy and job satisfaction among early career agriculture teachers in Kentucky by years in the profession.

### Methods

The design for this study was descriptive-correlational research. This study focused on a census of all early career agriculture teachers in Kentucky. As a result, sampling procedures were not used, and no generalizations were made. Specifically, early career agriculture teachers were grouped by years in the profession. Those with 1-2 years comprised Group 1, those with 3-4 years comprised Group 2, and those with 5-6 years comprised Group 3.

The long form of the Teachers' Sense of Efficacy Scale (TSES) was used to determine teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). This instrument used teacher self-efficacy constructs consisting of student engagement, instructional practices, and classroom management to determine the level of teacher self-efficacy. A panel of experts composed of department faculty established face and content validity of the instrument. Reliability was established through previous research. Tschannen-Moran and Woolfolk-Hoy reported reliabilities for each construct. The student engagement construct had a reliability coefficient of 0.87, the instructional practices construct had a reliability coefficient of 0.94, and the classroom management construct had a reliability coefficient of 0.91.

Job satisfaction was determined using the Brayfield-Rothe Job Satisfaction index (1951) as modified by Warner (1973). Face and content validity for the job satisfaction section were established through a panel of experts, and reliability was established through prior research with secondary agriculture teachers. Cano and Miller (1992) reported a Cronbach's alpha coefficient of .94 for the summated scale.

Dillman's (2000) Tailored Design Method—including an initial postcard, an email containing the link to the instrument, a reminder email, a second reminder, telephone follow-up, and finally a complete hardcopy package (cover letter, instrument, and return envelope)—was used to collect

data for this study. Upon completion of all contacts and follow-ups, 68 usable questionnaires were received resulting in an 85% response rate.

Non-response error was controlled by comparing early and late respondents (Miller & Smith, 1983) on the variables of interest (teacher self-efficacy constructs and job satisfaction). In an effort to obtain the greatest amount of possible discrepancy, the first 25% ( $n = 17$ ) of respondents were compared with the last 25% ( $n = 17$ ) of respondents. No statistical differences were detected between the

groups for teacher self-efficacy or job satisfaction. Therefore, results were deemed representative of the entire population.

### Results/Findings

Objective 1 sought to determine the selected demographic characteristics (age, gender, and years of teaching experience) of early career agriculture teachers in Kentucky ( $N = 80$ ). Table 1 summarizes nominal level data findings of early career agriculture teachers in Kentucky.

Table 1  
*Demographic Characteristics of Early Career Agriculture Teachers in Kentucky (N = 68)*

Variable	<i>f</i>	%
Age		
20 – 25 years	27	39.7
26 – 29 years	29	42.6
30 – 39 years	8	11.8
40 – 49 years	1	1.5
50 – 59 years	3	4.4
Over 60 years	0	0.0
Gender		
Male	39	57.4
Female	29	42.6
Years of Teaching Experience		
Group 1 (1 – 2 years)	26	38.3
Group 2 (3 – 4 years)	19	27.9
Group 3 (5 – 6 years)	23	33.8

Regarding age, more than 80% of respondents were between 20 and 29 years of age, eight respondents (12%) were between 30 and 39 years of age, and the remaining 6% were between the ages of 40-59. Thirty-nine (57.4%) respondents were

male, and 29 (42.6%) were female. The greatest number of teachers comprised Group 1 (38%) followed by Group 3 (34%) and Group 2 (28%).

Objective 2 sought to determine the level of teacher self-efficacy of early career

agriculture teachers in Kentucky by years in the profession. Data were reported through summated means according to group (years in the profession). Respondents in Group 1 had a mean teacher self-efficacy score for student engagement of 6.34 ( $SD = 1.06$ ) ranging from some to quite a bit of teacher self-efficacy for student engagement. This

group's mean teacher self-efficacy score for instructional practices was 6.95 ( $SD = .94$ ), and the mean score for teacher self-efficacy for classroom management was 6.98 ( $SD = 1.05$ ), indicating the group felt quite a bit of teacher self-efficacy for both instructional practices and classroom management (Table 2).

Table 2

*Teacher Self-Efficacy Constructs of Early Career Agriculture Teachers (N = 68)*

Efficacy Constructs	Years of Teaching Experience					
	Group 1		Group 2		Group 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Student Engagement	6.34	1.06	6.20	.81	6.60	.89
Instructional Practices	6.95	.94	6.55	.86	7.37	1.04
Classroom Management	6.98	1.05	6.81	1.10	7.49	1.14

*Note.* 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Respondents in Group 2 had a mean teacher self-efficacy score for student engagement of 6.20 ( $SD = .81$ ). Teacher self-efficacy of instructional practices was 6.55 ( $SD = .86$ ), and the classroom management score was 6.81 ( $SD = 1.10$ ). Group 2 teachers ranged between some and quite a bit of teacher self-efficacy for all three teacher self-efficacy constructs.

Group 3 respondents' mean teacher self-efficacy score for student engagement was 6.60 ( $SD = .89$ ). The mean score for instructional practices was 7.37 ( $SD = 1.04$ ), and the mean score for classroom management was 7.49 ( $SD = 1.14$ ). The Group 3 teachers ranged between some influence and quite a bit of teacher self-efficacy for student engagement. This group ranged between quite a bit and a great deal of teacher self-efficacy for instructional practices and classroom management.

Objective 3 sought to determine the current level of job satisfaction of early career agriculture teachers in Kentucky by years in the profession. Specifically, the researchers sought to determine to what degree these early career agriculture teachers were satisfied with teaching school-based agriculture. In all, the respondents agreed to be satisfied with their careers as

agricultural education teachers.

Objective 4 sought to determine the relationship between the constructs of teacher self-efficacy (student engagement, instructional practices, and classroom management) and overall job satisfaction. To determine relationships, the Pearson product moment correlation coefficient was used (Table 4). Magnitude of the Pearson product moment correlation coefficient was interpreted according to the Davis' (1971) conventions.

The relationship between the student engagement teacher-self efficacy construct and overall job satisfaction for Group 1 was positive and substantial ( $r = .54$ ). The relationship between the instructional practices teacher self-efficacy construct and overall job satisfaction was negative and low ( $r = -.12$ ). The relationship between the classroom management teacher self-efficacy construct and overall job satisfaction was positive and substantial ( $r = .57$ ).

The relationship between the student engagement teacher self-efficacy construct and overall job satisfaction for Group 2 was positive and substantial ( $r = .56$ ). The relationship between the instructional practices teacher self-efficacy construct and overall job satisfaction was positive and

very high ( $r = .84$ ). A positive and very high ( $r = .68$ ) relationship was found between the

classroom management teacher self-efficacy construct and overall job satisfaction.

Table 3  
*Level of Job Satisfaction of Early Career Agriculture Teachers in Kentucky (N = 68)*

	Years of Teaching Experience					
	Group 1		Group 2		Group 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Overall Job Satisfaction	4.04	.64	3.92	.51	4.10	.37

Note. 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree.

Table 4  
*Pearson Product Moment Correlations Between Teacher Self-Efficacy Constructs and Job Satisfaction of Early Career Agriculture Teachers in Kentucky (N = 68)*

	Teacher Self-Efficacy Constructs		
	Student Engagement	Instructional Practices	Classroom Management
Overall Job Satisfaction			
Group 1	.54	-.12	.57
Group 2	.56	.84	.68
Group 3	.12	.10	-.52

The relationship between the student engagement teacher self-efficacy construct and overall job satisfaction for Group 3 was positive and low ( $r = .12$ ). The relationship between the instructional practices teacher self-efficacy construct and overall job satisfaction was positive and low ( $r = .10$ ). A negative and substantial ( $r = -.52$ ) relationship was found between the classroom management teacher self-efficacy construct and overall job satisfaction.

**Conclusions/Recommendations**

The majority of early career agriculture teachers in Kentucky are less than 30 years old. Years of teaching experience was fairly consistent across the three groups with Group 1 comprising the most respondents (38.3%). All three groups of teachers were efficacious regarding the three efficacy constructs. They were most efficacious at managing the classroom and least efficacious at engaging students. Group 3 teachers had the highest teacher self-efficacy scores, and Group 2 teachers had the lowest, yet both groups ranged from some to quite a

bit of efficacy for all three constructs. These findings support studies by Knobloch and Whittington (2003), who found novice teachers ranged from some to quite a bit of efficacy for the three constructs of teacher self-efficacy.

These findings may have multiple implications as to the fluctuation in the level of teacher self-efficacy between the groups. The first implication surrounds the Group 1 teachers. Could it be that these scores are partially inflated because a portion of these teachers are fresh from college and have had very successful student teaching internships and thus are overly confident in their abilities as teachers? A successful student teaching experience would be considered a mastery experience (Bandura, 1977), thereby increasing the teacher’s level of self-efficacy. Group 2 teachers may have experienced a slight decline in their teacher self-efficacy because they may have faced more negative experiences that challenged their efficacy belief. These teachers have been in the profession long enough to face situations such as classes that were unruly, lessons that turned out poorly, or students

who refused to engage in the learning process. There may be two explanations for the sharp increase in teacher self-efficacy among Group 3 teachers. The first is that these teachers have had enough experience to firmly establish their own personal teaching style. Again, this aligns with Bandura's Self-Efficacy Theory. These teachers have faced and mastered more difficult situations, increasing their level of teacher self-efficacy. They have had many successes and have been able to perfect their preferred style of teaching. The second explanation is that the less efficacious teachers are no longer teaching. Is it possible teachers from this cohort with lower teacher self-efficacy have already left the teaching profession, resulting in the groups' increased summated mean score?

All three groups of early career agriculture teachers in Kentucky were satisfied with teaching agriculture but, like teacher self-efficacy, there is a dip in job satisfaction during the 3rd and 4th year in the profession. Group 1 teachers indicated a 4.04 mean score for overall job satisfaction. Group 2 teachers indicated a 3.92 summated mean score for overall job satisfaction, and Group 3 teachers indicated a 4.10. These findings are consistent with previous research (Garton & Robinson, 2006), which found agricultural education graduates and teachers to be satisfied with teaching agriculture. It could be implied these teachers were adequately prepared for their jobs prior to entering the workforce. In addition, the same implications explaining levels of teacher self-efficacy may also explain the slight fluctuation in overall job satisfaction. Group 1 teachers may be excited to be removed from the college setting and happy to be gainfully employed. The novelty of being employed may have worn off causing a lower level of overall job satisfaction in Group 2 teachers. The rise in job satisfaction among Group 3 teachers may be the result of a variety of circumstances. Could it be because these teachers have a higher sense of teacher self-efficacy, compared with the other groups, they are more satisfied with their chosen career? Another possible explanation is those teachers with lower levels of job satisfaction may have already left the

teaching profession by their 5th or 6th year.

A positive and substantial relationship exists between overall job satisfaction and the teacher self-efficacy constructs of student engagement and classroom management among Group 1 teachers. This group of teachers has quite a bit of efficacy for instructional practices and agrees to be satisfied with teaching. These findings suggest that those teachers with higher levels of teacher self-efficacy for the constructs of student engagement and classroom management will have a higher overall level of job satisfaction. There is little relationship between job satisfaction and instructional practices among Group 1 teachers. This begs the question, "Does gaining control of the classroom and effectively engaging students outweigh instruction?" Perhaps effectively managing the classroom and engaging students lays the foundation for effective instruction to occur. It appears that the abilities to engage students and manage the classroom indicate a more satisfied teacher. Another possibility is this group of teachers may have had an inflated perception of their teacher self-efficacy because they were overly confident in their abilities as educators (Knobloch, 2006).

The findings from the Group 2 teachers paint a slightly different picture. These teachers ranged from some influence to quite a bit of teacher self-efficacy for all three constructs and agreed to be satisfied with teaching. A positive and substantial relationship exists between overall job satisfaction and the teacher self-efficacy construct of student engagement. A positive and very high relationship exists between overall job satisfaction and the teacher self-efficacy constructs of instructional practices and classroom management. These teachers had the lowest levels of teacher self-efficacy and overall job satisfaction, yet the strongest relationship between the variables exists with this group. Relationships between teacher self-efficacy for instructional practices and classroom management and overall job satisfaction show the most dramatic differences between this and the previous group.

The findings from the Group 3 teachers show very different relationships between



overall job satisfaction and teacher self-efficacy. This group had the highest scores for both job satisfaction and the three constructs of teacher self-efficacy. Interestingly, little to no relationship was found between the teacher self-efficacy constructs of student engagement and instructional practices. Perhaps the biggest surprise was that there was a substantial but negative relationship between the construct classroom management and overall job satisfaction. Unlike the other two groups, the more teacher self-efficacy for classroom management the Group 3 teachers have, the less satisfied with teaching they are likely to be. Is this because they have enough experience to believe in their classroom management but are experiencing other factors that are causing them to become less satisfied with teaching? This might be the reason why so many teachers leave the profession by their 6th year (Walker, 2002).

Teacher educators, state staff, and school administrators should be alerted to the decline in teacher self-efficacy and job satisfaction Group 2 (3rd and 4th years). This decline could be a contributing factor as to why teachers leave the profession. Further research is warranted to determine why teachers in Group 2 (3rd and 4th years) are less satisfied and have lower levels of teacher self-efficacy than their colleagues in Groups 1 (1st and 2nd year) why this decrease in job satisfaction and teacher self-efficacy occurs could allow proper interventions to be created to counter the fluctuation. Because teacher self-efficacy for student engagement had the lowest mean score for all three groups, workshops and professional development events associated with student engagement should be provided for these teachers. This would allow these teachers to improve their ability to effectively engage students in the classroom, thereby increasing their teacher self-efficacy for student engagement.

It is recommended that this study be replicated and include teachers who left the profession prior to completing their first six years in the profession. Comparisons could then be made between those who remained teaching and those who left the profession. This would reveal differences in teacher

self-efficacy and job satisfaction between the two groups and determine if these variables play a role in whether teachers remain in or leave the profession.

It is also recommended that a longitudinal trend study be conducted to determine the relationship between teacher self-efficacy and job satisfaction. Further research should follow one group of first year teachers throughout the course of their first six years in the profession to allow more accurate measure of the evolution of teacher self-efficacy and job satisfaction.

## References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning [Electronic Version]. *Educational Psychologist*, 28(2), 117-148.
- Bandura, A. (1994). Self-Efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior*, 4, 71-81.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.
- Bennet, P. N., Iverson, M. J., Rohs, F. R., Langone, C. A., & Edwards, M. C. (2002). Job satisfaction of agriculture teachers in Georgia and selected variables indicating their risk of leaving the teaching profession. *Proceedings of the 29th annual National Agricultural Education Research Conference*, Las Vegas, NV, 60-72.
- Brayfield, A. H., & Rothe, H. F. (1951, October). An index of job satisfaction. *Journal of Applied Psychology*, 35, 305-311.
- Camp, W. G., Broyles, T., & Skelton, N. (2002). *A national study of the supply and demand for teachers of agricultural education in 1999-2001*. Blacksburg, VA: 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.

Davis, J. A. (1971). *Elementary survey analysis*. Englewood, NJ: Prentice-Hall.

Dillman, D. A. (2000). *Mail and internet surveys: The total design method* (2nd ed.). New York: John Wiley & Sons.

Garton, B. L., & Robinson, J. S. (2006). Tracking agricultural education graduates' career choice, job satisfaction, and employability skills. *Proceedings of the American Association for Agricultural Education Conference*, Charlotte, NC, 552-563.

Glickman, C. D., & Tamashiro, R. T. (1982). A comparison of first year, fifth year, and former teachers on efficacy, ego development, and problem solving. *Psychology in Schools*, 19(4), 558-562.

Hoy, W. K., & Miskel, C. G. (2005). *Educational administration: Theory, research, and practice* (7th ed.). Boston: McGraw-Hill.

Ingersoll, R. M. (2002). The teacher shortage: A case of wrong diagnosis and wrong prescription [Electronic Version]. *NASSP Bulletin*, 86(631), 16-31.

Kantrovich, A. (2007). *A national study of the supply and demand for teachers of agricultural education in 2004-2006*. Morehead, KY: Morehead State University.

Knobloch, N. A. (2006). Exploring relationships of teachers' sense of efficacy in two student teaching programs [Electronic Version]. *Journal of Agricultural Education*, 47(2), 36-47.

Knobloch, N. A., & Whittington, M. S. (2003). Differences in teacher efficacy related to career commitment of novice agriculture teachers [Electronic Version]. *Journal of Career and Technical Education*, 20(1), 87-98.

Marso, R., & Pigge, F. (1997). A longitudinal study of persisting and nonpersisting teachers' academic and personal characteristics. *Journal of Experimental Education*, 65(3), 243.

Miller, L. E., & Smith K. L. (1983). Handling nonresponse issues [Electronic Version]. *Journal of Extension*, 21(5), 45-50.

National Center for Educational Statistics. (n.d.). *The condition of education 2005*. Retrieved November 9, 2006, from [http://nces.ed.gov/programs/quarterly/vol\\_7/1\\_2/9\\_1.asp](http://nces.ed.gov/programs/quarterly/vol_7/1_2/9_1.asp)

National Education Association. (n.d.). *Attracting and keeping quality teachers*. Retrieved November 9, 2006, from <http://www.nea.org/teachershortage/index.html?mode=print>

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct [Electronic Version]. *Teaching and Teacher Education*, 17, 783-805.

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.

Walker, W. D. (2002). *Retention and attrition of Missouri agriculture teachers*. Unpublished doctoral dissertation, University of Missouri, Columbia.

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

Warner, P. D. (1973). *A comparative study of three patterns of staffing within the cooperative extension organization and their association with organizational structure, organizational effectiveness, job satisfaction, and role conflict*. Unpublished doctoral dissertation, Ohio State University: Columbus.

Whittington, M. S., McConnell, E. A., & Knobloch, N. A. (2003). Teacher efficacy of novice teachers in agricultural education at the end of the school year. *Proceedings of the 30th Annual National Agricultural Education Research Conference*, Orlando, FL, 204-215.

Wilkinson, G. A. (1994). Support for individualizing teacher induction. *Action in Teacher Education*, 16(2), 52-61.

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