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The Influence of Time Management Practices on Job Stress Level among Beginning Secondary Agriculture Teachers

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Monitoring the stress of teachers continues to be important – particularly stress levels of beginning agriculture teachers. The study sought to describe the relationship between beginning teachers' perceived ability to manage their time and their level of stress. The Time Management Practices Inventory and the Job Stress Survey were used to measure and collect the data. The study was comprised of 36 beginning secondary agriculture teachers in Missouri. A highlight of the findings suggests that beginning teachers tend to perceive themselves as good managers of time when compared to norm data. Additionally, on average, these teachers are not in a state of stress. Low to negligible relationships exist between the seven time management practices and teachers' scores on the job stress, job pressure, and lack of support indices.

Keywords: early career; beginning agriculture teachers; time management; job stress

Introduction

The future of the secondary agriculture teaching profession lies with the recruitment and retention of effective, knowledgeable, and satisfied educators. This group of new educators will encounter a plethora of new tasks, responsibilities, roles and challenges. Although it is difficult to enter any career, some agriculture teachers are expected to fill a variety of instructional and program management roles with no induction or training period (Wildman & Niles, 1987). According to Jensen (1986) and Marso and Pigge (1997) and confirmed by Ingersoll and Smith (2003), between 40% and 50% of beginning teachers leave the profession by their sixth year of teaching. What factors could lead to such a high attrition rate?

Roberts and Dyer (2004a) suggested that traditionally-certified agriculture teachers faced issues of attrition and burnout, an indication that teaching is a stressful and time-demanding job. New teachers are often overwhelmed with their newfound responsibilities and a primary concern with beginning teachers is a lack of time (Adams & Krockover, 1997; Cruickshank & Callahan, 1983; Myers, Dyer, & Washburn, 2005; Warnick, Thompson, & Tarpley, 2006). Chapman and Hutcheson (1982) found that teachers who were less able to organize their time were more likely to leave the teaching profession, and teachers who leave the profession often cited long hours as a reason for their departure (Moore & Camp, 1979). Time and stress appear to be highly linked, but is there a relationship between beginning teachers' ability to manage their time and their self-perceived stress level?

Few secondary agriculture teachers are immune to stress. Beginning teachers, in particular, are susceptible to high levels of stress and have little problem finding work to fill their schedules (Talbert & Camp, 1994). For many beginning teachers, feelings of frustration due to

a lack of time is a realistic problem they must face (Britt, 1997; Mundt, 1991). Torres, Ulmer, and Aschenbrener (2007) noted that agriculture teachers typically have a greater workload and work longer hours than other secondary education teachers. It is, therefore, no surprise that beginning agriculture teachers experience a high-level of stress during the first seven or eight weeks of the school year (Joerger & Boettcher, 2000).

Review of Literature

The field of agricultural education faces a shortage of qualified secondary teachers to fill existing and future agricultural education program openings (Camp, Broyles, & Skelton, 2002; Connors, 1998; Kantrovich, 2007). This shortage is perpetuated by teachers leaving the profession early because they feel ineffective and overwhelmed (Bennett, Iverson, Rohs, Langone, & Edwards, 2002). The experience as a young teacher is different than that of a veteran teacher (Torres et al., 2007), and beginning agriculture teachers often experience feelings of frustration, overwhelming problems, and "a multitude of insecurities and problems" (Talbert & Camp, 1994, p. 35). One of the greatest challenges facing beginning teachers is time management, and time is a critical resource for learning to teach (Wildman & Niles, 1987). Because beginning teachers dedicated more time to the preparation of classroom instructional materials, time management is more of a concern to them than their experienced counterparts (Torres et al., 2007). Some novice teachers described the biggest concern of their first year of teaching was surviving in the classroom (Kagan, 1992). Teachers described additional classroom stressors: completing required paperwork, meeting deadlines, as well as planning lesson and curriculum for multiple classes each day (Mundt, 1991).

In addition to classroom duties, agriculture teachers are responsible for overseeing a variety of tasks in a comprehensive secondary agricultural program. These tasks include: managing student organizations, coaching competitive events, participating in professional organizations, advising students on their Supervised Agricultural Experience (SAE) projects, and managing the agricultural program (Terry & Briers, 2010). These additional responsibilities can quickly overwhelm the early career teacher. On average, the beginning teacher invests over 50 hours per week fulfilling these roles (Cole, 1981; Joerger & Boettcher, 2000).

Another time management issue for agriculture teachers is finding an effective balance between their home life and career. Teachers attributed problems associated with balancing personal and professional responsibilities to learning how to say "no," and balancing quality time among different life roles (Edwards & Briers, 1999; Mundt, 1991; Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005). Other teachers described difficulty with identifying priorities and maintaining personal motivation and a positive outlook as issues pertaining to the balance of work and home (Mundt & Connors, 1999). Some teachers cope with balancing work and family by intertwining their personal lives and careers by involving their spouses in the agriculture program (Lambert, Ball, & Tummons, 2010).

Beginning teachers can face issues regarding a finite amount of time and infinite opportunities for work. However, the culture of agricultural education expects teachers to fulfill all roles, competently, regardless of time constraints (Lambert et al., 2010). In a Delphi study, Roberts and Dyer (2004b) identified characteristics of effective agriculture teachers as described by teacher educators, state staff, and current agriculture teachers. Their study revealed that an effective agriculture teacher "puts in extra hours" (p. 90), "has an understanding and supportive wife/family" (p. 91), "effectively manages, operates and evaluates the agriculture program on a continuous basis" (p. 90), and "has excellent time management skills" (p. 91).

Both traditionally and alternatively certified teachers identified their greatest inservice needs to be in the area of professional development, including managing and reducing work-related stress, time management tips and techniques, and professional growth and development. Several authors (Heath-Camp, Camp, Adams-Casmus, Talbert, & Barber, 1992; Roberts & Dyer, 2004b) have recommended time management training as a means of addressing the stress of beginning teachers. In a study on preservice teachers, Woolfolk and Woolfolk (1986) found even a small amount of training in

time management can have both an immediate and a long term effect on the performance of pre-service teachers. Further, the participants of their study expressed excitement about training in time management.

Conceptual Framework

Macan (1994) provided a conceptual framework for understanding the complexity of perceived time control (see Figure 1). Macan described how an individual's perceived ability or inability to control time impacts a variety of outcomes (job-induced tensions, somatic tensions, job satisfaction and job performance). Macan's model suggested that these outcomes are not independent of each other, but rather are intertwined. Individuals who perceived control over their own time were found to have less tension from school situations than those who did not perceive to control their own time (Macan, Shahani, Dipboye, & Phillips, 1990). Those individuals also reported a higher perceived performance and greater satisfaction with both work and life (Macan et al., 1990) than those who perceived a lack of control.

Schuler (1979) proposed that, "time management means less stress for individuals, which means more efficient, satisfied, healthy employees, which in turn means more effective organizations" (p. 854). This was reflective of the traditional thinking about time management; however, Macan (1994) argued that these outcomes were not necessarily linked to the time management behaviors. Macan proposed that the outcomes were operating through a perceived control over time by the individual.

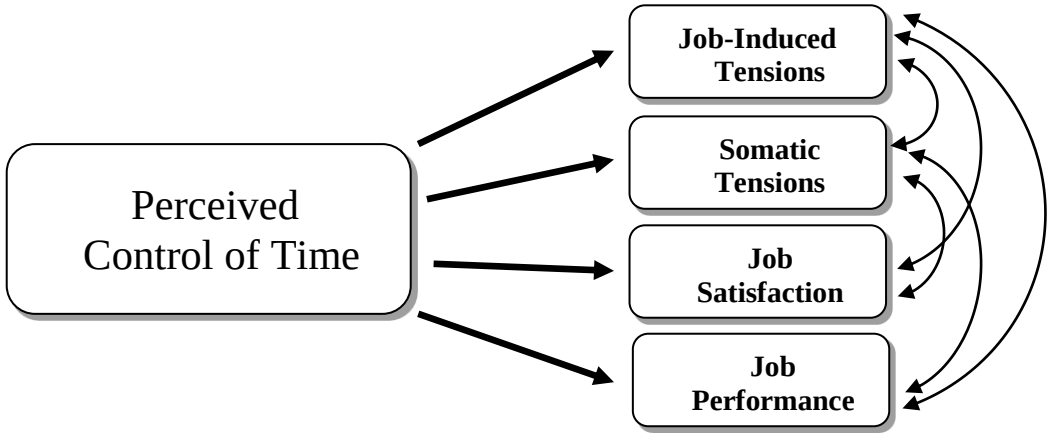

Figure 1. Macan's (1994) process model of time management.

In the model, perceived control over time has interactive effects with four outcomes: job induced tensions, somatic tensions (i.e. high blood pressure, ulcers, sleeplessness, etc.), job satisfaction, and job performance. This study sought to look only at relationship between the job induced tensions (work related stress) and perceived control of time.

Purpose and Research Questions

The notion that teacher stress was somehow linked to time management practices led to the purpose of the study. Recommendations for time management intervention have been suggested as a solution to managing teacher stress. However, there is a lack of research in agricultural education on the relationship between agriculture teachers' stress and their ability to manage their time. In light of a shortage of teachers in agriculture and the interest to retain them in the profession, beginning teachers were the focus of this study. Thus, the purpose of the study was to investigate the relationship between time management skills of beginning agriculture teachers and their stress levels. The study was guided by the following research questions:

1. What are selected personal and professional characteristics (gender, hours of work per week, teaching experience) of beginning agriculture teachers?
2. What is the time management profile of beginning agriculture teachers?
3. What is the job stress profile of beginning agriculture teachers?
4. What is the relationship between time management and job stress of beginning agriculture teachers?

Methodology

This study was descriptive-correlational in design. The purposive sample of the study included all beginning teachers who participated in the induction program in Missouri during the 2008-09 school year (n = 36). The frame was obtained from the coordinator of the program.

Two instruments were used in the data collection process. The first was the Time Management Practices Inventory (TMPI) developed by Pfaff (2000). The TMPI was designed to provide a brief assessment of current performance in the key areas of time management: Setting Priorities, Resisting Involvement, Meeting Deadlines, Self-Confidence, Planning, Taking Action, and Paperwork. Pfaff explained each time management practice. The strategy of Setting Priorities involved developing a system that prioritizes and completes activities in order of importance. The strategy of Planning entailed being proactive and analyzing what needed to be done during the planning phase of activities. Taking Action involved determining the reasons for procrastination. Pfaff described Resisting Involvement as the inability to say "no" when tasks are presented. Paperwork referred to the forms and documents a person must deal with in their occupation. Meeting Deadlines referred to the basic courtesy of being on-time. Self-Confidence was another factor in time management. Low self-esteem can result in problems when trying to effectively manage time.

The TMPI was developed over a four-year period based initially upon a review of literature and then altered based on feedback from pilot test subjects. The instrument-creators used factor analysis to select the behaviorally-based statements and verify constructs. The TMPI contained 31 items and utilized a 7-point Likert-type scale; a response of 1 meant the person virtually never does what the statement describes; a response of 4 meant the person does what the statement describes one half of the time, or sometimes; and, a response of 7 meant that the person performs the behavior virtually always. The TMPI manual also provided normative data compiled from 435 managers, professionals, and office staff which was used in the comparison and interpretation of the results.

The TMPI measured time management using seven practice constructs. The practices of Setting Priorities, Resisting Involvement, Meeting Deadlines, and Self-Confidence were summated constructs of four items while the practices of Planning, Taking Action, and Paperwork were summated constructs of five items. The TMPI manual reported reliability estimates for the seven constructs. The reliability estimates were as follows: Setting Priorities (Cronbach's Alpha = .89), Planning (Cronbach's Alpha = .90), Taking Action (Cronbach's Alpha = .87), Resisting Involvement (Cronbach's Alpha = .72), Paperwork (Cronbach's Alpha = .71), Deadlines (Cronbach's Alpha = .76), and Self-confidence (Cronbach's Alpha = .85). All of the constructs met Nunnally's (1978) established .70 threshold for reliability of items in social science research.

Job stress data were collected using the Job Stress Survey (JSS) created by Spielberger and Vagg (1999). The JSS is a standardized, commercial instrument designed to measure work-related stress through perceived severity and frequency of stressful items. The developers of the JSS indicate that the instrument seeks to measure *work-related* stress. A review of the items is consistent with the claim; however, the developers do not mention the absence of global stress influence on the work-related stress.

The JSS contained two sections. Section one sought to determine teachers' perceived level of severity of 30 common job-related stressors using a scale from 1 to 9, with 9 being the most stressful measure. The second section sought to determine the frequency with which teachers have encountered the job-related stressor during the previous six months using a scale that ranged from zero days experienced to more than nine occurrences in the last six months (0 – 9+). The two responses (severity and frequency) were used in various combinations to produce three

stress index scores: Job Stress Index, Lack of Support Index, and Job Pressure Index. Index scores were calculated by multiplying severity scores by frequency scores. A third section was added to the questionnaire to collect gender, hours per week at work, and years of teaching experience. Both paper-pencil and electronic versions of the JSS were created.

Spielberger and Vagg (1999) reported that validity and reliability of the JSS were established through the results of previous studies. The creation of the instrument was detailed in the *Job Stress Survey: Professional Manual*. Factor analysis was used to analyze construct validity of the items in the JSS. Alpha coefficients of .80 or higher were reported for all three index scales: Job Stress = .87, Job Pressure = .80, and Lack of Support = .80 (Spielberger & Vagg, 1999). The manual provided normative data for use in comparisons, and, for this study, the managerial professional normative data was selected because it most closely approximated the teacher group demographic.

Time Management data were collected online during the early part of January. One week after completion of the time management data collection process, the same group was used to collect job stress data. Two points of contact were used to collect the TMPI. All beginning teachers were sent an e-mail in January of 2009 with a link to complete the instrument online. Those not having completed the instrument one week later were sent a reminder e-mail with the same embedded link. A total of 32 (89%) participants responded. This response rate exceeded the necessary 85% suggested by Lindner, Murphy, and Briers (2001) for adequate representation of the sample; therefore, no further attempts to collect data were implemented.

The JSS was collected immediately following the TMPI data collection using the original frame of 36 teachers and utilized three points of contact. First, a paper copy was distributed (during an in-service training the teachers were attending) with a self-addressed, stamped return envelope and a signed cover letter. Within two weeks, there were nine responses returned in the mail. At that point, for ease of response, the researchers launched an online version of the instrument and an email containing a unique web link was sent to each of the participants. After one week, a reminder e-mail was sent which included the web link again. The online instrument yielded 24 responses total. One person completed both the online and the paper instrument and since the paper version was received first, the online submission was omitted. No differences were detected on the variables of significance between the online (M = 17.88; SD = 6.36) and paper (M = 14.69; SD = 4.86) instruments when a t-test was performed (t (28) = 1.22, p > .05). This yielded a total of 32 (89%) unique responses to the job stress instrument. To address objective four, only participants who completed both instruments were used (n = 28; 78%).

Data were coded by the researchers and analyzed using SPSS (v. 16). Frequencies, percents, and measures of central tendencies and variability were used to summarize the data. Pearson-Product moment correlations were also used. Davis' (1971) conventions were used to label the effect size. These statistics are assumed to only hold true for respondents in the study and are not intended to be generalizable.

Results

Table 1 displays the personal and professional characteristics of beginning teachers. Years of teaching experience was not a constant, as first thought (M = 1.52, SD = 1.39). In reality, the group had a range of experience from one to seven year(s). This appeared because the beginning teacher induction program was not just for first-year teachers, but was instead designed for all teachers completing their first-year as an agriculture teacher in Missouri, or who have not previously completed an induction program. The group was split almost evenly between males (f = 18, 52.94%) and females (f = 16, 47.06%). All but one teacher was working at least 46 hours per week, while two-thirds of these teachers reported working more than 55 hours per week.

Table 1
Selected Characteristics of Beginning Agriculture Teachers (*n* = 34)

Characteristic	*f*	%	*M*	*SD*	Range
Sex					
Male	18	52.94			
Female	16	47.06			
Hours of work per week					
35-45	1	3.23			
46-55	9	29.03			
56-65	13	41.94			
66-75	5	16.13			
75+	3	9.68			
Years Teaching Experience			1.52	1.39	1-7

Note. Valid percents reported. Missing data

Table 2 reports the beginning teachers' time management practice scores as well as comparative norm data. Beginning teachers were above the norm data on all time management practices. This indicates that our teachers perceived themselves to be better at time management that the norm. Teachers showed the highest mean on Meeting Deadlines (*M* = 5.92) followed by Self-Confidence (*M* = 5.66), Setting Priorities (*M* = 5.59), Planning (*M* = 5.03), Taking Action (*M* = 4.67), Paperwork (*M* = 4.61), and Resisting Involvement (*M* = 4.48).

Table 2
Time Management Practices of Beginning Agriculture Teachers (*n* = 32)

	Teacher Data				M/P Norm Data	
TMPI Practice	Grand Mean[c]	Mean Total	*SD*	Range	Mean Total	*SD*
Meeting Deadlines[b]	5.92	23.69	3.06	14-28	23.00	4.00
Self-Confidence[b]	5.66	22.66	3.03	16-27	21.00	3.50
Setting Priorities[b]	5.59	22.38	2.84	17-27	22.00	4.10
Planning[a]	5.03	25.13	5.36	14-35	23.00	7.00
Taking Action[a]	4.67	23.34	3.60	15-29	22.00	5.00
Paperwork[a]	4.61	23.06	4.10	14-31	21.00	5.00
Resisting Involvement[b]	4.48	17.94	3.23	9-23	17.00	4.00

Note. Possible maximum values = [a]35; [b]28; [c]Scale = 1-7

Job stress information on beginning teachers appears in Table 3. Data at or above the 70th percentile indicates a stressed group. Beginning teachers did not meet that threshold on any of the three job stress indices. Teachers scored at the 52nd percentile on the Job Pressure Index (*M* = 25.51, *SD* = 8.77), at the 41st percentile on the overall Job Stress measure (*M* = 17.14, *SD* = 6.12), and at the 32nd percentile on the Lack of Support Index (*M* = 11.48, *SD* = 7.90).

Table 3
Stress Indices of Beginning Agriculture Teachers (*n* = 32)

Index	*M*	*SD*	Range[a]	M/P Norm Data
Job Pressure	25.51	8.77	3.30 - 40.90	52nd percentile
Job Stress	17.14	6.12	2.83 - 27.37	41st percentile
Lack of Support	11.48	7.90	0.50 - 28.00	32nd percentile

Note. [a]Maximum value equals 81

Correlations were computed to investigate the association of seven time management practices with the three measures of job stress (see Table 4). There was one moderate correlation found between job stress and time management. This was a moderate negative correlation (r = -.36) between Self-Confidence and Job Stress indicating that the more confident a person felt about their ability to manage time, the less stress they felt on the job or vice versa. Four moderate correlations were found between Job Pressure and time management. Moderate negative correlations were found between Job Pressure and the time management practices of Setting Priorities (r = -.43), Planning (r = -.35), Taking Action (r = -.36), and Paperwork (r = -.32) indicating that the more skilled a teacher perceived themselves at setting priorities, planning, taking action, and/or completing paperwork, the less pressure they may feel on the job. There were no moderate correlations; however, three low correlations were found with lack of support. There was a low, positive correlation between Lack of Support and Meeting Deadlines (r = .11) as well as with Resisting Involvement (r = .28) while a low negative correlation was found with Self-Confidence (r = -.16). This indicates that a teacher who perceives a strong ability to say no and meet deadlines or who has high self-confidence in their own ability to manage time seem to be feeling a greater support in the school environment.

Table 4
Pearson-Product Moment Correlation between Stress Indices and Time Management Practices (*n* = 28)

	Job Pressure		Job Stress		Lack of Support	
TMPI Practice	*r*	ES	*r*	ES	*R*	ES
Meeting Deadlines	-.27	Low	-.07	Negligible	.11	Low
Self-Confidence	-.50	Substantial	-.36	Moderate	-.16	Low
Setting Priorities	-.43	Moderate	-.16	Low	-.01	Negligible
Planning	-.35	Moderate	-.27	Low	-.05	Negligible
Taking Action	-.36	Moderate	-.10	Low	.06	Negligible
Paperwork	-.32	Moderate	-.13	Low	.09	Negligible
Resisting Involvement	-.27	Low	.01	Negligible	.28	Low

Note. Usable paired data only

Conclusions/Implications/Recommendations

Beginning teachers represented in the study are split across male and female. While the average years of teaching experience is a year and a half, all teachers studied were in their first year of teaching agriculture in Missouri. The data also suggests that 95% of beginning Missouri agriculture teacher work in excess of 45 hours per week.

Among the time management practices measured, beginning Missouri agriculture teachers, are most capable of Meeting Deadlines and Setting Priorities. Agriculture teachers also have a high sense of Self Confidence about their time management ability. Perhaps the general teaching profession has forced coping skills onto these beginning teachers. Because they appear to be doing well in these areas, no intervention is needed. However, beginning teachers are least

capable of resisting involvement at work and taking action on tasks and/or assignments. This suggests that beginning Missouri agriculture teachers have difficulty saying no to additional responsibilities and may tend to procrastinate. They also struggle with paperwork. This supports findings from Torres, Lawver, and Lambert (2009) which showed that excessive paperwork was a high stress item for teachers in both Missouri and North Carolina.

Focus should be given to the areas of resisting involvement, paperwork, and taking action. For resisting involvement, teachers perhaps should learn to say "no." Beginning teachers also need to learn how to delegate when they have too much work and do not have the capacity to meet the demands placed upon them. Utilizing volunteers, students, parents, and community members will help spread the workload. Additionally, they should work to minimize the amount of paperwork and implement strategies for managing correspondence. One strategy for taking action is to divide large projects into achievable steps with deadlines. Moreover, beginning teachers should use their skills in setting priorities to guide the tasks they choose. Perhaps they are procrastinating because the task does not fit within the teacher priorities for the program. This understanding and assistance could occur in a teacher preparation program for traditional teachers and during the induction or mentoring program for non-traditional teachers.

While there is room for improvement and calls for intervention may be appropriate, it should be noted that compared to the normative data provided by the TMPI (Pfaff, 2000), beginning agriculture teachers in Missouri appear to be more effective at managing their time. These beginning teachers scored higher than the normative data on each of the seven time management practices. Does the structure of teaching school force beginning teachers to become good managers of their time? Perhaps the six months of teaching experience for our average respondent has in some way sensitized the need for time management.

When assessing the stress profile for these beginning teachers, it is important to remember that most teachers were working in excess of 55 hours per week. According to Torres, Lambert, and Lawver (2009), this should be a predictor for stress. Despite the long work hours, beginning teachers, on average, have not crossed the stress threshold (70th percentile) in the stress indices of Job Pressure (52nd percentile), Job Stress (41st percentile), or Lack of Support (32nd percentile). While, on average, the teachers were not in an overall state of stress, some teachers have crossed the stress threshold. Interventions recommended in this section are intended for those stressed teachers in the group but could also serve as best practices for all teachers, regardless of their stress level.

There are several possible arguments for why this group of beginning teachers, on average, was not exceedingly stressed. Perhaps, there is still some novelty, having only been in their teaching positions for about six months. According to Moir (1990), these teachers would be in the rejuvenation stage following their Christmas break and the rest it provided. The teachers are excited about having made it through the first half of the year and have adopted some strategies to cope for the rest of the academic year. Perhaps at this young stage of their career, the teachers are not yet dealing with a lot of family-oriented stress at home with which later career teachers may have to contend. Or, more likely, perhaps this underscores the effectiveness of the beginning teacher/mentoring program in Missouri. Should this be the case, all beginning teacher should be encouraged to actively participate in the Missouri beginning teacher/mentor program. However, this program only includes teachers in their first or second year in Missouri. State staff in agricultural education should encourage an informal mentoring process for early career teachers outside the limits of the induction program.

The association of time management practices on job stress level among beginning agriculture teachers was investigated. There was a moderate, negative correlation between Self-Confidence and Job Stress indicating that the higher a person's self-confidence as a manager of their own time, the lower their stress levels tended to be. This supports the literature (Schuler, 1979) that time management practices reduce stress. These findings also connect directly back to the conceptual framework provided my Macan (1994). The teachers' perceived control over their time was indeed connected to lower job induced tensions. Teacher supervisors should consider the confidence level of novice teachers in targeting

those in need of additional support and attention. Additionally, state staff should offer professional development activities that continue to develop confidence among novice teachers. And, of course, the novice teachers need to continue to receive verbal reassurance that their experiences are normal and that all beginning teachers share their feelings. They should also be reassured of their performance and praised for a job well done.

Also interesting was the finding that there did not appear to be a strong link between time management practices and feelings of support from the teaching profession. This could stem from the fact that beginning teachers felt an overall high level of support. However, the most obvious link between stress and time management was that there are more substantial and moderate correlations between Job Pressure and time management practices than with any other index of stress that was measured. This indicates that the more frequent use of the time management practices, the better teachers were at handling the job pressure associated with teaching agriculture. This is yet another finding to support the benefits of using time management practices with future teachers. Professional development specialists should emphasize the importance of time management practices as a coping strategy for job pressure.

The findings and conclusions herein do not definitively portray the characteristics and associations of all beginning teachers; they simply serve as a point of reference. Additional research should be undertaken to confirm or refute the results of this study. Additionally, research should be conducted with a larger sampling of beginning secondary agriculture teachers from across the country. Further, while there are many factors pertaining to teacher retention, level of job stress often times is complicated by alternative explanations. Researchers should continue to dissect the problem area for antecedents to stress levels. These data should be closely inspected to provide meaningful interventions and assistance to new teachers.

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