

ACADEMIC STRESS AND ACADEMIC SELF-EFFICACY OF FIRST YEAR PRE-SERVICE TEACHERS

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Abstract

The study measured the relationship between academic stress and academic self-efficacy associated with first year pre-service teachers at one university in South Africa, during the first term of their academic year. The sample consisted of 96 participants: 41 males and 55 females. A questionnaire comprising two subscales measuring academic stress and academic self-efficacy was used to collect quantitative data. The two subscales measured 27 identical tasks categorized into four domains, namely, learning demands in class, interaction with fellow students and lecturers at university; managing work, parents and relatives; and academic performance outside of class. The study found average to low level of academic stress, moderate to high level of perceived academic self-efficacy and negative correlation between academic self-efficacy and academic stress. The findings of this study suggest academic self-efficacy play an insignificant role in coping with academic stress.

Keywords: academic stress, academic self-efficacy, pre-service teachers

1. INTRODUCTION

Students experience problems as they progress from one level of education to the next. The situation becomes severe as they move from school level education to tertiary education. The main sources of stress for these students have been cited as their sudden separation from their families and subsequent adjustments to new environments. The university environment has been perceived to be very stressful as students battle to deal with their newly found independence from their parents. Having been removed from their parents, they then need to form new relationships with other students as well as new lecturers. Such relationships are sometimes not easy to start or sustain. The students' self-efficacy beliefs in this regard can help the students' to deal with their academic stress as academic stress can affect academic performance.

Research has shown the negative effects of academic stress on academic performance (Nakalema and Ssenyonga, 2014; Arsenio and Loria, 2014; Deb et al. 2014; Bataineh, M. Z. (2013). For example, Nakalema and Senyonga (2014) found daily academic hassles as being the most common stressor among undergraduates in a Ugandan University. Financial problems, excessive academic workloads and social expectations were also found to be a greater source of stress among first year students compared with the continuing students.

Although the effects of academic stress on academic performance have been widely studied in school-

related settings as indicated in the literature, more research is needed to address the effects of academic stress of first year university students. Research by Choi and Lee (2012) looked at the relationship between academic stress and college adjustment. They reported a negative relationship between academic stress and college adjustment but a positive relationship between self-efficacy and college adjustment. This paper examines the relationship between self-efficacy and academic stress of first year pre-service teachers.

2. LITERATURE REVIEW

2.1. Academic stress

Various causes of academic stress among students have been found to include poor study habits and poor time management (Macan, Shahani, Dipboye, & Phillips, 1990), preparation for written examinations (Baldwin, Wilkinson, & Barkley, 2000), and demands of coursework (Robotham, 2008). Fontana in Abid (2006) extend the list by adding problems associated with revision of the work, organization of study materials, and taking notes during lectures. Students experience problems in dividing their attention between listening and note-taking and this could affect their academic performance negatively. Thus it becomes essential for students to employ suitable coping strategies to help them to get out of a stressful situation (Smith & Renk, 2007).

Among other stressors -Sinha, Sharma, & Nepal, 2001 cite limited opportunities available to students and high competitiveness in the university environment. Research has shown that stress create tension, fear, and anxiety in students (Sinha, Sharma, & Nepal, 2001; Dahlin, Joneborg, and Runeson, 2005; Misra, Mckean, West, and Russo, 2000). Course overload has been found to correlate with examination stress; Talib & Zai-ur-Rehman, 2012) and the possibility of failing or passing the examination as that can shape the direction or course of one's academic career and professional life.

Interpersonal relations and personal factors (Devonport & Lane, 2006), and the university environment itself can be sources of academic stress. Kuh (2000) highlighted the important characteristics of a supportive academic environment as one that provided support to students to succeed academically and socially. Such an environment enables the students to meet the non-academic demands and provides support that enhances the student's relationship with fellow students, faculty staff, and institutional administration. Finding a balance between the newfound freedoms as well as maintaining a high level of academic performance can be stressful (Robotham, 2008).

Research findings by Misra, McKean, West, and Russo's (2000) suggest that stress levels vary by gender of the students. Other studies (e.g. Abouserie, 1994; Bang, 2009; Misra and McKean, 2000; Rayle & Chung, 2008) found that female students experienced higher levels of academic stress because of negative appraisals of the stressful event and focus on the emotional challenges in the wake of the stressful event.

Male students on the other hand are trained to display strength and machismo in the face of challenges right from their young age (Misra and McKean, 2000). On the contrary, female students were found to perform better than the male students and had better GPAs than male students even in case of significant stress (Talib and Zia-ur-Rehman, 2012).

In the South African context some of the factors contributing to academic failure have been reported by Brussow (2007: 135) as: a lack of effective study skills, inability to understand complex material, a lack of self-efficacy, dependence on teacher support, ineffective management of study time, academic overload, a lack in behavioural self-control skills, anxiousness in an academic environment, unrealistic future expectations and dissatisfaction with the course. These have been found to affect students differently and are a force to be reckoned with. Lecturers especially of first year students have to be aware of these and others and be able to help the students to deal with them.

The next section deals with self-efficacy.

2.2. Self-efficacy

Self-efficacy refers to beliefs about one's capabilities to learn or perform behaviours at designated levels (Bandura, 1986, Zimmerman (2000) contends that self-efficacy is a multidimensional construct that varies according to the domain of demands. It must therefore be evaluated at a level that is specific to the outcome domain (Bandura, 1986; Pajares, 1996).

Four sources of self-efficacy have been identified and discussed in literature, namely mastery experience, vicarious experience, verbal persuasions, and physiological arousal (Bandura, 1977, 1986). Self-efficacy has been found to have some influence on academic motivation, learning, and achievement. Zajacova, et al.

(2005) investigated the level of academic self-efficacy and perceived stress associated with 27 college-related tasks. Consistent with studies by Saklofske, et al. (2012) the results suggest that academic self-efficacy is a consistent predictor of academic success than stress. Choi and Lee (2012) found a negative relationship between academic stress and college adjustment but a positive relationship between self-efficacy and college adjustment. There was however a partial mediating effect of self-efficacy between academic stress and college adjustment.

2.3. Academic Self-efficacy and Academic stress

Self-efficacy and stress are closely related concepts. Personal beliefs such as self-efficacy are crucial in evaluating demands from the environment. Each external demand is evaluated as a threat or a challenge and persons with high self-efficacy beliefs are more likely to evaluate the demands as a challenge (Chemers, Hu, and Garcia, 2001). This means that, the extent to which a person feels confident about his/her performance to handle a given situation affects whether a given task is perceived as stressful or threatening, rather than a challenge. When a task is perceived as a challenge, one is more likely to select an effective coping strategy and to persist at managing the task. Self-efficacy thus affects the perception of external demands and mediates the relation between external stressors and psychological stress (Bandura, 1995 in Zajacova, Lynch and Espenshade, 2005).

While social cognitive theory provides a coherent framework linking self-efficacy and stress, most research has explored their independent roles in explaining academic outcomes. Some studies found self-efficacy as a better predictor of academic success than stress (Pintrich and De Groot, 1990). Looking at the joint effect of the two, Sandler (2000a, 2000b) found that career decision making self-efficacy was a more consistent predictor of academic performance than perceived stress.

2.4. Research Questions

The main research question in this paper concern the relationship between academic self-efficacy and perceived academic stress of first year pre-service teachers at one university in South Africa. Our analysis was guided by the following research questions.

- What is the level of academic stress of first year university students?
- What is the level of academic self- efficacy of first year university students?
- Are there statistically significant differences between academic stress and the academic self-efficacy?
- What is the nature of the relationship between academic self-efficacy and academic stress of first year university students?

3. METHODOLOGY

3.1. Participants

The participants consisted of 96 full-time first year pre-service teachers of mixed gender (Table 1) at one university in South Africa. The sample was randomly selected from the larger population of first year students. Of the total 120 surveys randomly selected and distributed to the respondents, 96 completed questionnaires were returned, yielding a response rate of 80%. Consent for participation was obtained prior to the survey.

Table 1 Gender

	Frequency	Percentage
Male	41	42.7
Female	55	57.3
Total	96	100

Seventy four (74) percent of the students were between 18 and 24 years old. The majority of these students 84.4% came from the rural villages of Limpopo province and stayed off-campus.

3.2. Instrument

The study used an adapted version of self-completed questionnaire developed by Zajacova, Lynch and Espenshade (2005) to measure academic stress and academic self-efficacy of first year pre-service teachers. The questionnaire consisted of two parts. The first part measured participants' biographical data while the second part measured academic self-efficacy and academic stress in relation to specified identical tasks.

Each of the two scales (self-efficacy and stress) contains 27 tasks for which students had to respond on 11-point Likert type scale of 0-10. This scale is pretested on first year pre-service teachers with a \pm alpha-coefficient value of 0.98 as compared to 0.93 reported by Zajacova et al (2005).

The score varies from 10 as maximum and 0 as minimum. A mean score of 10 indicated high level of stress and self-efficacy, 5 moderate level of stress and self-efficacy, and 3 or less indicating a lower level of stress and self-efficacy.

3.3 Statistical Analysis

Four Domains of analysis were considered when carrying out data analysis: ability in class, difficulty with interaction at university, managing work, parents and relatives and academic performance outside of class. The researchers used the Statistical Package for Social Science (SPSS) (Version 23) to analyse the responses.

In order to test the research questions, Pearson Product Moment Correlation coefficients were computed to examine the relationship between academic stress and academic self-efficacy. Because of the exploratory nature of this study, an alpha level of $p < .05$ was used to determine significance for all correlations. In statistical terms this means the results could be negative or positive correlated between academic stress and academic self-efficacy by five percent. Participants who scored above the mean average of five were deemed as having high academic stress and academic self-efficacy respectively. Participants who scored below the average mean were deemed as having low academic self-efficacy in dealing with academic stress.

4. FINDINGS

Findings are presented according to the four categories that were identified in the study. Table 2 presents data on "Learning demands in class".

Table 2. Learning demands in class (N=96)

	Academic stress		Academic self-efficacy		Pearson Correlation (sig 2-tailed)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>R</i>	<i>N</i>	<i>p value</i>
Studying the right material	4.98	2.74	5.99	2.52	-.103	96	0.320
Writing tests	4.73	2.89	5.93	2.86	-.112	96	0.227
Asking question in class	4.36	2.83	4.82	2.67	-.083	96	0.419
Doing well in exams	4.80	2.93	5.90	2.63	-.228	96	0.026*
Writing many tests	5.73	2.88	5.31	2.36	-.081	96	0.435
Taking good class notes	4.19	2.77	5.61	2.52	-.077	96	0.456
Understanding my lecturers	4.27	2.84	5.42	2.76	-.040	96	0.698
Participating in class discussion	4.59	2.85	5.48	2.95	-.145	96	0.158
Keeping up with required readings	4.35	2.58	5.44	2.55	-.137	96	0.184
Total	4.67	2.81	5.54	2.65	-	96	-

The data analysis in Table 2 shows negative correlation between academic stress and academic self-efficacy based on writing test, asking question in class, writing many tests, taking good class notes, understanding lecturers and participating in class discussion. Data analysis found a statistically significant correlation ($r = 0.026$, $n = 96$, $p < .026$) between academic stress and academic self-efficacy based on performance in exams.

Table 3 shows levels of academic stress and academic self-efficacy of the students when interacting with fellow students and lecturers at the university.

Table 3. Interaction with fellow students and lecturers at University (N=96)

	Academic stress		Academic self-efficacy		Pearson Correlation (sig 2-tailed)		
	M	SD	M	SD	R	N	p value
Understanding my lecturers	4.27	2.84	5.42	2.76	-.040	96	.696
Making friends at university	4.27	3.17	5.45	2.79	-.139	96	.176
Talking to my lecturers about my work	4.95	2.67	4.89	2.62	-.093	96	.388
Getting help and information I need	4.73	2.64	5.25	2.55	-.012	96	.907
Talking to university staff other than my lecturers	4.47	2.51	5.07	2.89	-.060	96	.562
Understanding university regulations	4.30	2.96	5.81	3.20	-.076	96	.461
Finding information on a given assignment	4.86	3.09	6.05	2.77	-.065	96	.531
Total	4.55	2.84	5.42	2.80	-	96	-

The data analysis in Table 3 shows negative correlation between academic stress and academic self-efficacy when interaction with fellow students and lecturers at University. The results suggest that both academic stress and academic self-efficacy has no effect on students' academic stress when interacting with their fellow students and academic staff.

Table 4. Work Management, parents and relatives' pressures (N=96)

	Academic stress		Academic self-efficacy		Pearson Correlation (sig 2-tailed)		
	M	SD	M	SD	R	N	p value
My parent's expectation of my marks	4.80	3.19	5.49	2.73	.067	96	.519
Managing both school and work	4.75	2.91	5.77	2.61	-.031	96	.762
Getting along with family members	4.14	3.03	5.65	2.84	.094	96	.364
Not having enough money	5.94	3.01	4.77	2.98	.093	96	.366
Total	4.91	3.04	5.42	2.79	-	96	-

The data analysis in Table 4 reveals no positive correlation between self-efficacy and academic stress when interaction with fellow students and lecturers at University. Overall, the results suggest that both academic stress and academic self-efficacy has no effect on students' work management, parents and relatives' pressures.

Table 5. Academic performance outside of class (N=96)

	Academic stress		Academic self-efficacy		Pearson Correlation (sig 2-tailed)		
	M	SD	M	SD	R	n	p value
Getting assignment done on time	4.54	2.93	5.75	2.79	-.155	96	.133
Preparing for exams	4.94	3.06	5.79	2.65	.002	96	.982
Managing my life efficiently							
Improving my reading and writing skills	4.56	2.76	6.14	2.87	-.117	96	.256
Getting the kind of marks that I want	4.61	2.82	5.83	2.79	-.070	96	.499
Doing well in my most difficult subjects	4.83	2.74	5.41	2.60	.008	96	.937
Finding time to study	4.65	3.19	5.98	2.82	-.020	96	.850
Total	4.69	2.92	5.82	2.75	-	96	-

No positive correlation between academic stress and academic self-efficacy is observed in Table 5. The results suggest that both academic stress and academic self-efficacy has no effect on students' academic performance outside of class work.

5. DISCUSSION

This study measured the effects of academic self-efficacy on academic stress of first year Pre-service teachers. The study found that the majority of first year pre-service teachers surveyed experience academic stress in one way or the other. On the contrary, an average mean score of (M=4.68, SD=2.90) suggest that majority of pre-service teachers are identified in the moderate stress category. This is similar to studies from

Portugal and Saudi Arabia about stress prevalent among university first year students.

The study found lack of enough money as the greatest academic stressor ($M=5.94$, $SD=3.01$). As is the case with many disadvantaged communities, the majority of students who join higher institutions of learning in South Africa come from poor backgrounds.

The dimensions of poverty here may be thought of as an individuals' financial resources, the family's financial resources, material resources such as the kind of accommodation a student occupy, the physical conditions under which he or she learn on campus, access to health care, his or her wellbeing, the sociocultural resources that are related to students' academic background and the sustainability of these resources (Machika and Johnson, 2014). As a result of these psychological stressors, students become preoccupied with finding ways of addressing these needs.

The findings of this study also showed that, although pre-service teachers' self-efficacy remained averagely high in all the four variables, learning demands in class ($M=5.50$, $SD=2.80$), Interaction with fellow students and lecturers at University ($M=5.42$, $SD=2.68$), Work Management, parents and relatives pressures ($M=5.42$, $SD=2.78$) and Academic performance outside of class ($M=5.82$, $SD=2.75$).

A stress relevant situation is appraised as challenges when it mobilises physical and psychological activity and involvement (Bandura, 1999). Bandura (1977) hypothesized that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences.

Self-efficacy is found to be one of the ways of coping with stress related to situation (Jerusalem and Schwarzer, 2014). Bandura (1991) hypothesized that expectations of personal efficacy determine whether coping behaviour will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. Using a path analytic model, Chemers, Hu, and Garcia (2001) found that the effect of academic self-efficacy on stress was completely mediated by evaluations of demands as threat or challenge.

In the other studies, physiological arousal states associated with stress and anxiety was found to offer information affecting self-efficacy judgments (Pajares, 1996; Solberg et al., 1998). Similarly, Hackett et al. (1992) suggested that stress and anxiety may depress self-efficacy judgments of students. Other general self-efficacy measures were not found to be predictive of any college outcomes (Ferrari and Parker, 1992; Lindley and Borgen, 2002), while academic self-efficacy has been consistently shown to predict grades and persistence in college.

This study measured the relationship between academic self-efficacy and academic stress where academic self-efficacy refers to students' confidence in their ability to cope with academic stress (Zajacova, et al. 2005). The results of data analysis found no positive correlation between academic stress and academic self-efficacy in all the variables measured. The results suggest that although academic self-efficacy indices have a strong effect on academic outcomes (Multon, Brown, and Lent, 1991), it has little or no effect on academic stress.

Thus, the findings of this study are supported by cognitive theory (Bandura, 1991) that posits a strong negative relationship between self-efficacy and perceived stress. For example, the results of a number of studies that examined the relationship between self-efficacy and stress among college students have consistently shown a moderate to strong negative correlations (Gigliotti and Huff, 1995; Hackett et al., 1992; Solberg, Hale, Villarreal, and Kavanagh, 1993; Solberg and Villarreal, 1997; Torres and Solberg, 2001).

6. CONCLUSION

In conclusion, this study found that academic stress is generally prevalent among first year students studied. This may be attributed to the normal everyday stressors of daily life as well as to the additional stress of course workload, lack of leisure time, material to be learned and frequent academic examinations in a competitive environment.

One limitation of this study is its reliance on self-reported measures, based on a small sample from a predominantly first year pre-service teachers from one university in South Africa. The results should be considered in context, and not be generalized to other segments of the population without further investigations. In particular, similar studies should be conducted on a more heterogeneous population and other university settings to determine the associations between academic self-efficacy and academic stress constructs.

Despite these limiting factors, the present research has examined the interrelationship between academic

self-efficacy and academic stress based on four key variables: learning demands in class, Interaction with fellow students and lecturers at university, work management, parents and relatives pressures and academic performance outside of class. Thus the results of study provide important insights for using academic self-efficacy to reduce academic stress.

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