

Chapter 25

PATTERNS OF ENGAGEMENT AND ANXIETY IN UNIVERSITY STUDENTS: FIRST YEAR TO SENIOR YEAR **Students' work engagement & anxiety: Are they related?**

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ABSTRACT

Several researches have shown student engagement as an important predictor of academic outcomes and educational success. Yet, despite evidence that student engagement is an important determinant of performance at university, it has been under analyzed in research and practice, particularly in relation to academic years of study, engagement and psychological distress. Therefore, the goal of the undertaken research is to: (a) assess the level of student engagement and anxiety across academic years of study (i.e., freshman, sophomore, junior and senior), and (b) examine the correlation between student engagement and anxiety. Two instruments, Utrecht Work Engagement Scale-Student Version (UWES-S) and Anxiety scale from Depression, Anxiety and Stress Scale (DASS) were used for the purpose of this research. The sample comprised of 492 female students who were enrolled at a private university in Jeddah, KSA. Results of One-Way ANOVA indicated a statistically significant difference in engagement based on academic year of study, $F(3, 172) = 3.63$, $p = .01$. Additionally, student engagement was inversely related to anxiety, $r(430) = -.13$, $p < .01$. Findings of this study indicate that engaged students tend to have low anxiety levels. Further research is recommended to explicate the role of engagement and anxiety across academic years.

Keywords: university students, engagement, anxiety.

1. INTRODUCTION

The Cooperative Institutional Research Program's (CIRP) Freshman Survey involving 1.5 million students, released in 2013, revealed instability in student's overall mental health. The findings not only pointed towards "anxiety is on the rise" but revealed that students feel increasingly overwhelmed at university (Eagan, Lozano, Hurtado, & Case, 2013). These finding parallels the National Survey of Student Engagement (2012) survey (NSSEs) results, which demonstrated that students continue to feel, challenged in their classes.

These data reveal continuing high levels of emotional distress and an increase in achievement abilities among students. While recent research has found that university students generally are up to four times as likely to be psychologically distressed as other people of their age, female students are known to experience psychological distress at rates higher than male counterparts. (e.g., Abdulghani, AlKanhah, Mahmood, Ponnampuruma, & Alfaris, 2011; Leahy et al. 2010)

According to student involvement theory (Astin, 1999), involvement is defined as "the amount of physical and psychological energy that students devote to the educational experience in college". Another premise of this theory is the idea that students' involvement enhances the development of both cognitive and affective outcomes in collegiate or university endeavors by facilitating learning.

Building on Astin's theory of student involvement, Shneiderman (1998) coined the term "student engagement" to define students' meaningful learning in classroom contexts.

Roberts and McNeese (2010) conducted a study to investigate student engagement based on educational origin and found significant differences between student's academic year of study and overall engagement. Their results also indicated that transfer students engaged less as compared to the indigenous counterparts.

Recognizing the importance of engagement in university students, several universities (e.g., Columbia University, New York University, Missouri State University, King’s College London, and University of Maryland) have specified engagement programs for student’s academic year of study. Evaluations of NSSEs Student Achievement Guarantee in Education (SAGE) project aimed at boosting engagement in university indicated that those students who got them enrolled in SAGE reported significantly higher scores on engagement but no significant differences in terms of academic effort and distress. Further, freshman and sophomore reported more engagement and career gains as compared to juniors and seniors. These findings suggest that anxiety and withdrawal occurs when greater academic challenges are perceived, e.g., as in case of juniors and seniors (Kashdan & Fincham, 2004).

Eisenberg and colleagues (2007) found that the estimated prevalence of anxiety in undergraduate university students was 15.6% which lends additional support to the above findings. Clearly, students’ engagement with academic or extracurricular activities is important to address and seemingly linked to psychological wellbeing.

Attempts to assess engagement in relation to achievement and learning are widespread in educational research. However, the majority of this work has been conducted in the United States, with relatively few international studies done in Western Europe and Australia. As evident from the above studies, little research as yet has examined how engagement contributes to anxiety and therefore, the objective of the current research is to: (a) assess the level of student engagement across academic years of study, and (b) examine the relationship between student engagement and anxiety.

1.1. Research questions

- i. Is there any significant difference between student engagement and collegiate levels e.g., freshman, sophomores, juniors and seniors?
- ii. Is there any significant difference between anxiety and collegiate levels e.g., freshman, sophomores, juniors and seniors?
- iii. Is there any significant relationship between student engagement and level of anxiety among university students?

2. BACKGROUND

Student engagement provides an important backdrop for the social, emotional and cognitive development of students, accounting for a large proportion of performance at university. It is characterized by a continuum of energy; involvement and efficacy for meaningful learning.

The importance of engagement has been increasingly recognized in relation to achievement and learning (e.g., Abdulghani et al., 2011, Carini, Kuh, & Klein, 2006; Cross, 2005). Considerable progress has been made in conceptualization, assessment, and investigation of the important but subtle concept of engagement in students (Grier-Reed, Appleton, Rodriguez, Ganuza, & Rechly, 2012). In the past, the most common means of measuring engagement has been through the use of indicators (e.g., attendance, portion of tasks completed, amount of participation and time spent, intensity of student concentration, the enthusiasm and interest expressed, and the degree of care shown in completing academic work) via observation or case studies, rather than through empirical testing (Newmann, Wehlage, & Lamborn, 1993).

Despite the expansion of engagement in university students, the body of empirical research investigating the level of engagement across academic levels is still relatively small (e.g., Kuh, 2002; Roberts & McNeese, 2010) Therefore, this research is inclined to examine student engagement and anxiety across academic year of study.

2.1. Engagement in Academia: The antecedents

Newmann et al. (1993) defined engagement as “the student's psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote”. Since “psychological investment” and

“effort” to “master” are not readily observable characteristics; engagement is a construct used to describe an intrinsic quality of concentration and efforts to learn (see Newmann et al. 1993, pp. 11-12).

Engagement stands for persistent, positive, fulfilling and pervasive state of mind (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002; Schaufeli & Bakker, 2004), in contrast to superficial participation, apathy, or lack of interest. It implies more than motivation (Newmann et al., 1993) and is characterized by affective-cognitive factors such as social support and intrinsic motivation (Appleton, Christenson, Kim, & Reschly, 2006; Newmann et al. 1993; Skinner, Furrer, Marchand, & Kindermann, 2008). Thus engagement is dynamic, malleable, and affects students’ psychological, physiological and social support systems within and outside academic context.

At the collegiate level, student engagement is linked to participation in educationally purposeful activities (Casuso-Holgado et al., 2013; Kuh, 2002; Kuh, Linnenbrink, & Pintrich, 2003; Zhao & Kuh, 2004) and has been measured by the NSSE on an annual basis since 2000. As a result, colleges and universities are gaining an understanding of the levels of engagement within their first-year and senior students and are provided with practical ways of enhancing engagement. NSSE has brought campus reforms because its research has been a valuable contribution to American higher education. Findings of NSSE indicate an upward trend in achievement abilities and challenges related to competition at university, classroom demands and academic expectations (Eagan et al., 2013). Moreover, seniors are less likely to participate in a learning community as part of coursework (NSSE). To sum up, evaluations of NSSE indicate that students who are actively involved gain more from college experience. They were satisfied, received more teachers’ support and had an increased participation in classes. Therefore, it is important to focus on the ways to encourage student engagement in students beginning from first years to senior year (Pascarella & Terenzini, 2005).

Moreover, the importance of students’ engagement with educational institutions is recognized by educators, as is the observation that far too many students are bored, unmotivated, and uninvolved, i.e., disengaged from the academic and social aspects of educational life (Appleton, Christenson, & Furlong, 2008). This suggests that students confront many challenges while pursuing their educational paths and when such challenges are perceived as negative, engagement and/or motivation gets affected adversely. On the contrary, engagement seems to serve as an important social signal, eliciting supportive reciprocal reactions, for example, when students are engaged, they are provided with more motivational support by their teachers (Louis & Smith, 1993; Skinner & Belmont, 1993).

2.2. Understanding the adverse effect of Engagement: Anxiety spike

While NSSEs findings purport an increase in level of engagement, CIRP (Cooperative Institutional Research Program) 2012 highlights the need to address low emotional stability among university students (Wyer, 2013). The CIRP survey gauged that students felt frequently overwhelmed during their senior year (30.4 percent in 2012 vs. 28.5 percent in 2011). More than twice as many incoming female students (40.5 percent) reported feeling frequently overwhelmed as compared to first-year male students (18.3 percent). This finding parallels Abdulghani et al. (2011) and Leahy et al.’s (2010) studies, both of which indicated that the prevalence of anxiety is higher in females. Furthermore, the age at which mental disorders (e.g., mood disorders, eating disorders) manifest themselves is between 18 and 24, which coincides with the average age of student enrolled in higher education (Kessler et al., 2005).

The Healthy Minds Study (2012) involving 25,000 students from 29 US based universities screened 20% of the respondents sample as positive for anxiety. Dori Hutchinson, one of the lead researchers of the study reported that 30% of the students screened positive for anxiety or depressive disorders in the year 2012 were referred for mental health services. However, in 2013, the number jumped to 65% and both students and administration laid emphasis on the marginalization of mental health resources (Selingson, 2013). Further, the number of students struggling with anxiety is rising (Noguchi, 2014; Gallagher, 2008). University students who report high levels of anxiety often cite academic expectations heightened by high achievement (e.g., GPA) and the gap between academic expectations and

reality as one of the sources of anxiety (Flatt, 2013). A research conducted by Van der Merwe (2003) revealed that students who experience high educational demands such as meeting deadlines, running from class to class, complex decision making and an external locus of control (poor coping skills, lack of recognition and social support) experience higher emotional exhaustion.

Larcombe, Tumbaga, Malkin, Nicholson, and Tokatlidis (2013) conducted a study to examine psychological distress among law students and reported that less than half of the respondents were in the normal ranges for all three of the DASS scales (Depression, Anxiety, Stress Scales) and 40% of the total respondents reported severe levels of anxiety. Similarly, Abdulghani et al. (2011) conducted a study at King Saud University to examine the levels of stress and its effects in medical students and found that physical problems were associated with student's academic year, and prevalence of stress was higher during the first three years with females reporting higher levels of psychological distress.

These findings suggest that students manifest a triad of behavioral, psychological and physical symptoms as part of their academics. As evident from the literature, the extent to which students' level of engagement may affect anxiety has not attracted much research particularly across academic years of study. Thus, this research contributes to understanding the impact of student engagement on negative emotional state i.e., anxiety, by examining engagement in conjunction with anxiety across academic years of study.

3. METHODOLOGY

3.1. Participants

The sample comprised of 492 female undergraduates enrolled in a private university in Saudi Arabia ($M = 20.22$ yrs, $SD = 1.97$, $R = 16$). Of those reporting their year in college, freshmen ($n = 198$) comprised 40%, sophomores ($n = 144$) 29%, juniors ($n = 57$) 12%, and seniors ($n = 93$) 19%.

3.2. Procedures

All participants were sent a cover letter through university's internal email system along with a link to the questionnaire that had (shortened) student version of work engagement UWES-S (Schaufeli et al., 2002) and Anxiety Scale of DASS (Lovibond & Lovibond, 1995) along with some demographic information such as age, level, major, college, marital and employment status. The participants were provided the necessary information about the purpose of the survey, and were instructed that if they volunteer to respond to the survey, they will receive 2 points as part of their optional value points requirement. Alternatively, they may choose not to participate and were also assured that their identity as well as responses will be kept strictly confidential and will be used only for the research purposes.

3.3. Measures

3.3.1. Utrecht Work Engagement Scale (Schaufeli et al., 2002). A widely used Utrecht Work Engagement Scale (UWES) includes a total of 9 items and is designed to measure the cognitive and affective states of engagement at work. It is characterized by three positive, fulfilling, work related states of mind namely: vigor, dedication and absorption. For the present study, the student version of work engagement (UWES-S) was used. The UWES-S is scored on a 7-point scale (i.e., almost never, rarely, sometimes, never, often, very often, and always), where high scores indicate a high level of engagement. The data yielded a high reliability. (Cronbach $\alpha = .85$)

3.3.2. Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995). It is a 4-point scale with 42 items that has values ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). It differentiates between states of depression, anxiety, and stress, rather than looking at undifferentiated distress. For the present study, only Anxiety scale

(14 items) that assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect was administered. The reliability of the scale in the data set was very high, $\alpha = .90$

3.4. Data analysis

Originally designed for employees at work, the UWES-S was developed and normed on a diverse sample of students. The UWES-S has correlated as expected with measures of academic performance, (e.g., GPA, and achievement) and behavior (e.g., burnout).

Validations of the UWES support the use and reliability of one-factor model instead of three-dimensional model, particularly for the shortened version of UWES. Correlations between latent and manifest UWES factors (vigor, dedication and absorption) were high (ranged from .77 to .98) and therefore, it is recommended that the three dimensions of the scale be collapsed and treated as one factor i.e., engagement for practical uses (Schaufeli & Bakker, 2004).

Consequently, for the present analysis, participants' responses on UWES-S items were given a mean score which determines classification within five levels of engagement namely: "very low", "low", "average", "high" or "very high" (See Schaufeli & Bakker, 2004). Additionally, anxiety items were given a raw score which determined classification within five levels of anxiety symptoms, namely: "normal", "mild", "moderate", "severe", or "extremely severe" (see Lovibond & Lovibond, 1995).

All data was analyzed via Statistical Package for the Social Sciences version 17 (SPSS v.17.0). The primary analysis involved one-way ANOVA for the dependent variables; self-reported scores on engagement and anxiety. The independent factor was academic year of study with four levels: freshman, sophomore, junior and senior. To avoid violating the basic assumption underlying ANOVA, outliers were removed and normality of both engagement and anxiety was assessed through the Shapiro-Wilk Test. With the exception of freshman and seniors' score on anxiety, all data was approximately normal against the dependent variables ($p > .05$). Since the sample size differed among groups, F values were computed on the basis of Welch statistics. Moreover, a Pearson correlation between engagement and anxiety was also computed.

4. RESULTS

Descriptive statistics ($n = 492$) indicated that 57% of the participants had "average" level of engagement. Approximately 37% of the respondents scores returned in the "normal" range for anxiety scale, and the remaining respondents were relatively evenly distributed across mild (7%), moderate (18%), severe (14%), and extremely severe (24%). Figure 1 and 2 shows the percentage of ranges associated with engagement and anxiety across academic year of study.

Figure 1. Engagement level of students.

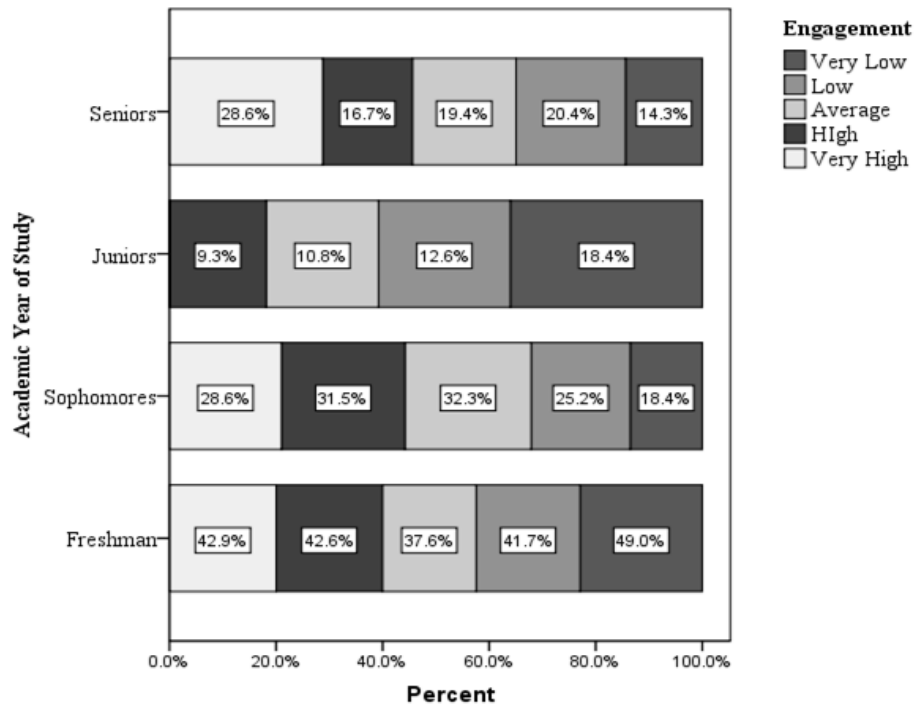
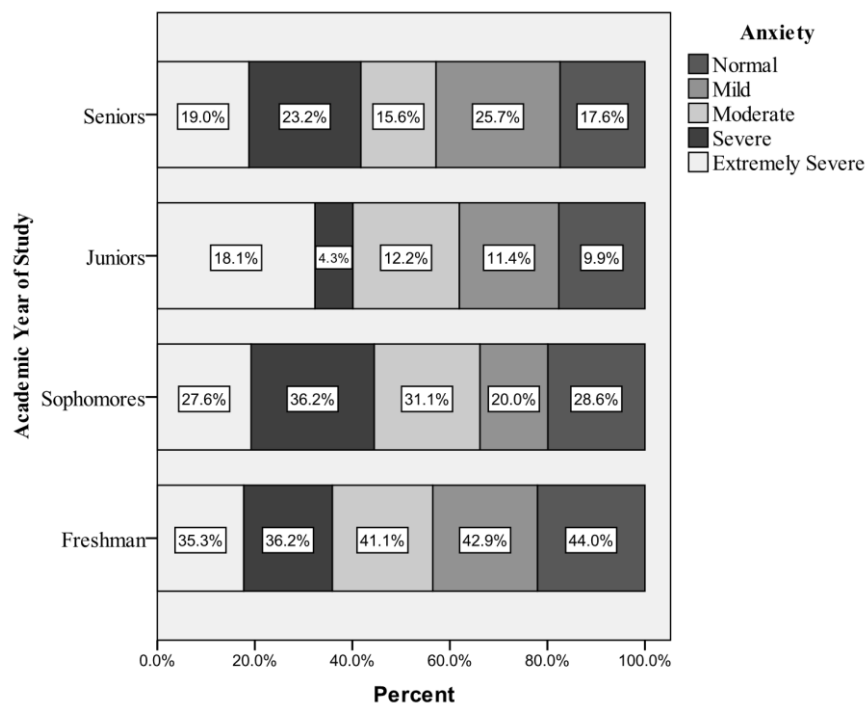


Figure 2. Anxiety level of students.



4.1. Academic year of study and engagement

There was a statistically significant difference between academic year of study and engagement as determined by one-way ANOVA, $F(3, 172) = 3.63, p = .01$. Freshman and sophomores reported more engagement than did juniors and seniors. Post hoc comparisons with the use of Dunnett’s C test indicated a significant difference in the level of engagement between sophomores and juniors. No significant differences between other groups were found. The 95%

confidence intervals (CI) for the pairwise differences, as well as the means and standard deviations for the four levels are reported in Table 1.

Table 1. 95% Confidence Intervals of pairwise differences in level of Engagement (n = 432).

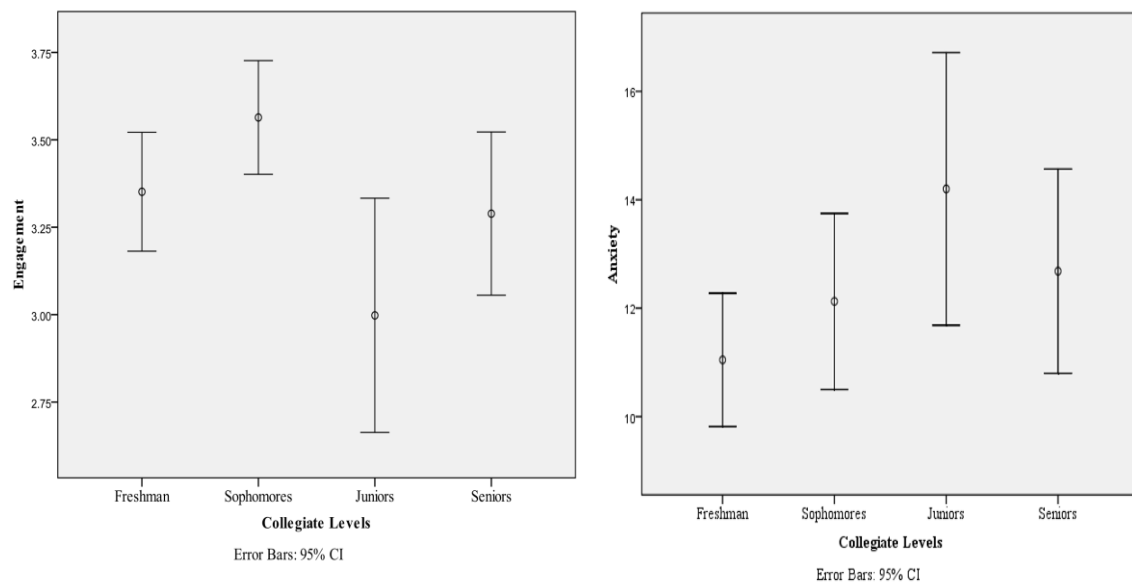
College Year	M	SD	1.	2.	3.
1. Freshman	3.35	1.13	--		
2. Sophomore	3.56	.90	-.10 to .52	--	
3. Junior	2.99	1.24	-.85 to .14	-1.1 to -.07*	--
4. Senior	3.29	1.08	-.44 to .32	-.65 to .10	-.25 to .83

Note: An asterisk indicates that the difference in mean is significant at the .05 significance using Dunnett's C procedure.

4.2. Academic year of study and anxiety

The ANOVA for year in college and anxiety was not significant, $F(3, 172) = 2.05$, $p = n.s.$ Freshman ($M = 11.05$, $SD = 8.17$), sophomores ($M = 12.13$, $SD = 8.98$), juniors ($M = 14.20$, $SD = 9.30$) and seniors ($M = 12.68$, $SD = 8.74$) did not significantly differ on the reported levels of anxiety. Figure 3 represents error bars for levels of engagement and anxiety.

Figure 3. 95% CI Error Bars for Engagement and Anxiety across academic levels.



4.3. Engagement and anxiety

Using a Pearson correlation (two-tailed), it was found that engagement was negatively correlated with anxiety, $r(430) = -.13$, $p < .01$.

Descriptive statistics indicated that engaged students tend to have low anxiety levels. Further, results of ANOVA indicated that freshman and sophomores were more engaged as compared to juniors and seniors. To further explore this relationship, a correlation between engagement and anxiety for each data set was computed. The results are presented in Table 2.

Table 2. Correlations between Engagement and Anxiety across academic year of study (n = 432).

	df	r	p
Freshman	170	-.22	.00*
Sophomore	118	-.17	.07
Junior	53	.02	.87
Senior	83	.02	.84

* $p < .01$

5. DISCUSSION

The current study examined engagement and anxiety in university student samples across academic years of study. Descriptive statistics indicated that overall, students have “average” engagement with “moderate” anxiety. This finding parallels NSSEs results that indicate an upward trend in student engagement and achievement as well as CIRPs findings that revealed “anxiety is on the rise”.

Most notably, with respect to engagement, no junior student fell into the category of “very high” and a vast majority (18%) scored “very severe” on anxiety. Further, less than half (37%) of the respondents were in the “normal” range for anxiety scale and indicated that majority of the sample had scored “severe” on anxiety. One possible explanation lies in the conjecture that anxiety exacerbates as students transit from sophomore and junior years. For example, in comparison to other levels, juniors were the least engaged ($M = 2.99$, $SD = 1.24$) and majority of them were in “extremely severe” range on anxiety scale ($M = 14.20$, $SD = 9.30$). Similarly, seniors’ anxiety scores ($M = 12.68$, $SD = 8.74$) were high as compared to freshman and sophomores. While the mean scores on anxiety showed that freshman and sophomores had lower levels of anxiety, this difference was not statistically significant ($p < .05$). This result is in compliance with the findings of Larcombe et al. (2013), who did not find any statistically significant difference between anxiety levels and academic years of study. Similarly, findings of NSSEs engagement program (SAGE) indicated agitation in juniors and seniors. Moreover, no significant differences on engagement benchmarks or career gains were found between juniors and seniors who enrolled in SAGE as compared to those who did not. These suggest that third and fourth year student’s perceptions about academic challenge and campus environment should be explored.

Attempts to assess engagement in relation to achievement and learning have been widespread but very few studies have followed a comparative approach with a focus on collegiate levels. Findings of this study divulge that the differences in the mean responses of engagement were statistically significant. The present patterns of findings indicate that juniors and seniors are less engaged than freshman and sophomore counterparts. Therefore, it would be useful to examine the factors associated with low and high engagement across collegiate levels. Further, the weak but significant correlation between anxiety and student engagement suggests that engaged students tend to have low anxiety levels.

This study makes two notable contributions to understanding engagement and anxiety across academic levels. First, it confirms that UWES-S is a reliable measure for assessing engagement in students ($\alpha = .85$). Secondly, it demonstrates that level of engagement substantially contribute to variations across academic years of study, and to their anxiety levels. For example, of all the four levels, freshman were the most engaged as compared to the other three levels. The correlation ($r = -.22$, $p = .00$) indicates that anxiety decreases as engagement increases.

6. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The present study is not without its limitations that need to be considered while evaluating the major findings. Firstly, the study was done in a private setting and included females exclusively as its sample. Secondly, all data was gathered in present/real time. Thus, one avenue for future research is to utilize longitudinal design and examine students’ engagement and anxiety over the course of their graduation journey.

This work also lays the foundation for future work examining the influence of motivating or de-motivating factors such as credit hours, teacher support and access to resources, technical support and realistic deadlines towards student engagement. Casuso-Holgado et al. (2013) has shown that grade point average is strongly associated with student’s engagement and tends to be different for males and females. Future research may examine the interaction between student’s gender, academic performance, perceived peer/family

support and credit hours on engagement. The researcher is also interested in exploring whether reported engagement and/or anxiety levels would vary as a function of time. For example, in the present study, all data was collected during the beginning of semester (Fall 2013) which leads us to question whether the scores being average/moderate will hold towards the end of the semester as well. One way to examine the extent to which these findings are particular only to Saudi is to extend this work by replicating or examining students' engagement and anxiety since the beginning of enrollment i.e., assess them throughout the course of their four/five year program. Similar studies in other countries with added variables such as depression, stress, anxiety, GPA, social and organizational support could provide valuable insight into the source of expected or unexpected set of relationship between engagement and anxiety across academic years of study. Further, the undertaken research up to this point has not utilized the pre-post design which may provide an opportunity for future research as well. Future research examining (a) what are the factors that motivate students to engage, (b) what strategies do academicians use to engage students, and (c) how can students stay engaged without getting emotionally drained is also recommended.

7. CONCLUSION

The researcher hypothesized that more engaged students would be more likely to score high on anxiety. The weak negative correlation between the two variables does not allow the researcher to assert this fact, but the present pattern of findings indicates that student engagement has a positive association with negative emotions such as anxiety. However, it is necessary to explore this relationship extensively, by including variables such as depression, stress, learning style, coping strategies and campus involvement, and seek answers for maximizing students' engagement.

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KEY TERMS & DEFINITIONS

Student Engagement: Natriello (1984) defined student engagement as the willingness to participate in routine school activities, such as attending class, submitting required work, and following directions. This definition focuses on learners' attitudes or affect and their willingness to meet implicit expectations within the context of an institution (Chapman, 2003).

Anxiety: general term for several disorders that cause nervousness, fear, apprehension, and worrying. These disorders affect how we feel and behave, and they can manifest real physical symptoms.

Academic Years of Study: refers to the four undergraduate years defined by total number of earned credit hours at Effat University.

Freshman: 0 – 32 credit hours

Sophomore: 33 – 65 credit hours

Junior: 66 – 96 credit hours

Senior: Above 97 credit hours

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