



Student Engagement in relation to Academic stress and Self-Efficacy

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Abstract

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Students always acted as changing agent in the field of science and technology. Education brings desirable behaviour among students. Student engagement discusses how students approach academic activities in a learning context. How academic stress and self-efficacy influence student engagement? Using higher secondary school going students as participants; this paper attempted to answer this question. The study revealed that student engagement is significantly related to academic stress and self-efficacy. The study also revealed the role of certain demographic variables on student engagement.

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The academic environment and students approach to academic subjects has tremendously changed when compared to previous times. Is the change in the academic process affordable to the country and the society? Since the young adolescents are the asset of any nation their academic excellence is a crucial one to the country. Students' community is always the change agent of any system and at the same they posse many challenges and anxieties to the grown up people. Adolescence is the period of transition from childhood to adulthood and the key task of them is preparation for adulthood.

Adolescence is the most vulnerable age for development and they should be under an appropriate environment in growing process. The development of psycho social factors in one side and academic factors on the other side makes them most vulnerable to many problems. Their vital energy may be diverted to undesirable channel if a conducive environment not exists. An analysis of adolescents behaviour may reveal many thing

Family is a source of positive relationship and unique bonds among members and also it is the first school of life. It plays a central role in the emotional and cognitive development of human beings. The concept of self efficacy which relates to judgement people make concerning their ability to execute behaviour relevant to specific task or situations. It refers to the confidence in once ability to behave in such a way or to produce a desirable outcome (Bandura, 1977).

Self-efficacy

Self-efficacy is the belief in one's effectiveness in performing specific tasks. People who regard themselves as highly efficacious act, think, and feel differently from those who perceive themselves as inefficacious. They produce their own future, rather than simply foretell it (Bandura, 1997). For Bandura (1986), the capability that is most "distinctly human" is that of self reflection, hence it is a prominent feature of social cognitive theory. Through self- reflection people make sense of their experiences, explore their own cognitions and self-beliefs, engage in self evaluation, and alter their thinking and behaviour accordingly. Of all thoughts that affect human functioning, and standing at the very core of social cognitive theory, are self efficacy beliefs, "people's judgments of their capabilities to organise and execute course of action designated types of performances". Self-efficacy beliefs provide foundation human motivation, well-being and personal accomplishment. This is because unless people believe that their actions can produce the outcome they desire they have little incentive to act or to persevere in

the face of difficulties. Simply self efficacy is the extent or strength of one's own ability to complete tasks and reach goals. Psychologists have studied self efficacy from several perspectives, noting various paths in the development of self efficacy; the dynamics of self efficacy, and lack thereof, in many different settings; interactions between self efficacy and self concept; and habits of attribution that contribute to, or detract from, self efficacy.

Self efficacy affects every area of human endeavour. By determining the beliefs a person holds regarding his or her power to affect situations, it strongly influences both the power a person actually has to face challenges competently and the choices a person is most likely to make. These effects are particularly apparent, and compelling, with regard to behaviours affecting health.

Self efficacy makes a difference in how people feel, think and act. Self efficacy pertains to optimistic belief about being able to cope with a variety of stressors. People with high self efficacy choose to perform more challenging and difficult task. In terms of feeling low level of self efficacy is concerned with depression, anxiety, and helplessness. Feeling of self efficacy decrease in large groups compare to small group. Perceived self efficacy is people's beliefs in their capabilities to perform in a ways that give them control over events that affect their lives. Efficacy beliefs are the foundation of human agency. Unless people believe that they can produce results by their actions, they have little incentive to act.

Academic stress

Stress and its manifestations such as anxiety, depression, and burnout, have always been seen as a common problem among people in different professions and occupations. In the last few decades, alarm has already been provoked by the proliferation of books, research reports, popular articles and the growing number of organized workshops, aiming to teach people how to cope with this phenomenon (Keinan & Perlberg, 1986).

Stress is viewed as a negative emotional, cognitive, behavioural and physiological process that occurs in a person who tries to adjust and act with stressors (Bernstein, et al 2008). Stressors are defined as circumstances that disrupt, or threaten to disrupt, individuals' daily functioning and cause people to make adjustments (Auerbach & Grambling, 1998). According to Auerbach and Grambling (1998) stress is an unpleasant state of emotional and physiological arousal that people experience in situations that they perceive as dangerous to their well-being.

Stress is perceived in different ways and may mean different to different individuals. It is perceived as situations that cause individuals to feel tension, pressure, or negative emotions including anxiety and anger. Moreover, other people define stress as the response to existing situations, which includes physiological, emotional and behavioural changes (Bernstein, et al 2008).

It is important to note that stress can have both positive and negative effects on people. It means that stress may be a normal, adaptive reaction to threat. Its role is to signal and prepare individuals to take defensive action. Take for instance, fear of things that present realistic threats motivates individuals to deal with them or avoid them. Most psychologists assert that moderate stress motives individuals to achieve and fuels creativity, although stress may hinder individuals from performance on difficult tasks (Auerbach & Grambling, 1998).

Academic stress is mental distress with respect to some anticipated frustration associated with academic failure or even unawareness to the possibility of such failure. Students have to face many academic demands, for example, school examination, answering questions in the class, showing progress in school subjects. Understanding what the teacher is teaching, competing with other class mates, fulfilling teachers and parents academic expectations. These demands may tax or exceed available resources of the students. As a consequence, they can be under stress, since the demand is related to achievement of an academic goal. So, academic related to the achievement of an academic goal. Bisht (1989) has defined academic stress as a demand related to academics that tax or exceed the available



resources (internal or external) as cognitively appeared by the student involved. According to Bisht (1989) academic stress reflects perception of individual's academic frustration, academic conflict, academic pressure and academic anxiety.

Student Engagement

Student engagement has primarily and historically focused upon increasing achievement, positive behaviors, and a sense of belonging in students so they might remain in school. Because the focus was high school completion, research on student engagement targeted students in middle school and high school, where disengagement typically becomes a concern (Willms, Friesen, & Milton, 2009), and student engagement was seen as a way to re-engage or reclaim a minority of predominantly socio-economically disadvantaged students at risk of dropping out of high school. Over time, student engagement strategies were further developed and more broadly implemented as a way to manage classroom behaviors. More recently, student engagement has been built around the hopeful goal of enhancing all students' abilities to learn how to learn or to become lifelong learners in a knowledge-based society (Gilbert, 2007).

Fredericks, Blumenfeld, and Paris (2004) propose a definition of engagement made up of behavioural, emotional, and cognitive dimensions. Their work synthesizes a multitude of ideas and definitions surrounding engagement and condensed the term into three main categories: behavioural, emotional, and cognitive. These three categories in turn comprise the "meta construct" of engagement.

Behavioural Engagement: Behavioural engagement consists of students' involvement in academic and social activities. Three main categories of behavioural engagement include positive conduct, involvement in learning, and participation in school related activities (Fredericks et al. 2004). Positive conduct includes following class rules. Involvement in learning and academic tasks includes student behaviors related to concentration, attention, persistence, effort, asking questions, and contributing to class discussions. Participation in school-related activities includes athletics or school government.

Emotional Engagement: Emotional engagement is comprised of students' attitudes, interests, and values particularly related to positive or negative interactions with faculty, staff, students, academics, or the institution (Fredericks et al., 2004). Emotional engagement creates ties with institutions and builds students' desire to work. Three main components include students' affective reactions, emotional reactions, and school identification. Affective reactions in the classroom include student interest, boredom, anxiety, sadness, and happiness. Emotional reactions are positive or negative feelings toward the institution and instructors. School identification pertains to students' feelings of belonging and importance within the institutional environment.

Cognitive Engagement: Cognitive engagement, according to Fredericks et al. (2004), is divided into two components: psychological and cognitive. The psychological component encompasses motivational goals and self-regulated learning as it relates to investment, thoughtfulness, and willingness to put in the effort to comprehend complex ideas and master difficult skills. The psychological component stresses students' investment in learning and motivation to learn. The cognitive component involves self-regulated learning, metacognition, application of learning strategies and "being strategic" in thinking and studying.

The present study is intended to find out how Student Engagement is related to their academic stress and self-efficacy. One of the major goals of educators is to help the students to use their potential and capabilities to perform and attain their goals to the fullest. This is possible only if the students are actively involved in school activities. Movements like universalisation of elementary education as a fundamental right have improved the quality and quantity of school education in India. Kerala, being a role model, has better education system as compared to other states. Self-efficacy has an important role in determining student's academic

success and student engagement. Many teachers complains that student's are giving less important to their academic activities especially boys, because they were not able to cope up effectively with academic stress. Improved self-efficacy may helps to reduce academic stress and increases student engagement. In this study investigators try to find out whether self efficacy and academic stress has any significant effect on student engagement.

Objectives

1. To find out the correlation among self-efficacy, student engagement, and academic stress.
2. To find out the influence of demographic variables on self-efficacy, student engagement and academic stress among adolescence.
3. To know the influence of academic stress and self-efficacy on student engagement.

Hypotheses

1. There will be significant relationship between self-efficacy, student engagement, and academic stress.
2. There will be significant sex difference on self efficacy, student engagement, and academic stress.
3. There will be significant difference between 10th, Plus-one, and Plus two students on self efficacy, student engagement, and academic stress.
4. There will be significant influence of birth order on self efficacy, student engagement, and academic stress.
5. There will be significant influence of academic stress and self efficacy on student engagement.

Method

Participants

The participants of the study consist of 280 adolescents (both boys and girls) from higher secondary schools situated at Calicut district of Kerala state. The participants were selected randomly and their age range from 14 to 20. Among the total participants 112 (40%) were boys and 168 (60%) females. All the participants belongs to 10th, Plus one and Plus two classes. Among the total participants 150 (53.6%) were from 10th standard, 40 (14.3%) from Plus one and 90 (32.1%) from Plus two classes. Regarding the religious belief, 214 (76.4%) from Hindu religion, 62 (22.1) from Islam religion and the remaining 4 (1.4%) from Christian community. Out of the total participants 277 (98.9%) were day scholars and remaining 3 (1.1) hostellers. About family type, 260 (92.9) were from nuclear family and remaining 20 (7.1%) from joint family. Birth order of the participants were also collected and found that 164 (58.6%) students were first born, 91 (32.5%) were second born, and 25 (8.9%) were later born.

Instruments

1. Academic Stress Inventory: Academic Stress Inventory by Uma and Manikandan (2013) was used to measure the academic stress experienced by the students on their academic endower. This inventory was based on the theoretical concept introduced by Lin and Chen (2009). The response categories are viz, Strongly agree, Agree, Neither agree Nor disagree, Disagree, and Strongly disagree. Higher the score, higher the degree of stress experienced. Reliability coefficient of the instrument was established by calculating Cronbach Alpha and it was found to be .89. Authors of this inventory claims adequate face validity.
2. Self-Efficacy Scale: Self Efficacy of subjects was measured using Self-Efficacy Scale developed by Manikandan (2015). This is a one-dimensional scale, which measure how the individual perceives their own capacities. The scale consists of 14 items. The reliability of the scale was estimated by calculating Cronbach Alpha and it was found to be .87. Author of the scale claims face validity.

3. Student Engagement Scale: This scale was developed by Sini and Vijayakumari (2012) based on the theoretical frame work described by Fredricks, Blumenfeld, and Paris (2004) to measure school engagement of students. It is a five point Likert type scale which measures three components, namely: Behavioural engagement, Emotional engagement and Cognitive engagement. It consists of 45 items (15 items in each component). Reliability of the scale was calculated separately for each component and found to be acceptable. The reliability coefficient Alpha for Behavioural engagement is 0.78, Emotional engagement is 0.72, and for Cognitive engagement is 0.76 respectively. Since the scale was developed on the basis of sound theoretical frame work and incorporating suggestions from experts in the field, content validity for the scale is established.
4. Personal Data Sheet: The personal details of the participants such as age, sex, class, religion, birth order, number of siblings, type of family were collected using the Personal Data Sheet.

Procedure

Initially the investigators randomly identified various schools and contacted the authorities of the school personally. The purpose, objectives and relevance of the study were explained to the head of the institution. After obtaining consent from the authorities, the class mentors were introduced by the investigators. They introduced the investigators to the students. A self introduction and rapport with students was established. Then, the instruments were administered to the participants after giving necessary instructions to them. Assurance was given to each that the information gathered from them would be used only for research purpose and identity would be kept confidential. The completed instruments were collected back, checked for omission and incompleteness. The scoring was done as per the manual and entered the data in to a spread sheet for further statistical analysis.

Results and Discussion

Human behaviour is multidimensional and while studying if possible find out the relationship between variables which are under study. In this study, the variables were self efficacy, student engagement, academic stress and they were correlated with each other and the results are presented in table 1.

Table 1

Correlation of Academic Stress, Self Efficacy and Student Engagement

Variables	1	2	3	4	5	6
Behavioural Engagement(1)	-					
Cognitive Engagement (2)	.656**	-				
Emotional Engagement (3)	.577**	.606**	-			
Student Engagement (4)	.844**	.898**	.838**	-		
Academic stress (5)	-.235**	-.277**	-.170**	-.267**	-	
Self-efficacy (6)	.238**	.163**	.221**	.235**	-.369**	-

**p<.01

From table 1, it can be seen that student engagement negatively and significantly correlates with academic stress ($r = -.267$, $p < .01$) and positively with self-efficacy ($r = .235$, $p < .01$). This result revealed that when the students are involved on their studies they will

experience less academic stress. Similarly student engagement is higher; they may evaluate their ability as higher than those who have low engagement. Thus self efficacy increases, increases the student engagement and decreases academic stress, also when academic stress increases, decreases student engagement and self-efficacy. Self-efficacy plays a significant role in determining student engagement and academic stress. Students who have high self-efficacy, they may experience less academic stress than those who have low self-efficacy. It is same as in the case of student engagement, that is those who have high self-efficacy shows more cognitive, behavioral, and emotional engagement. Anand and Devi (2012) also reported that academic stress was significantly negatively related with self-efficacy and peer relations. Thus, the findings have important implications in understanding increasing rate of academic stress among students.

Demographic variables like biological sex of the individual may play significant role on their psychological makeup. There is a common observation that girl's students are having greater involvement on their studies especially in higher education. To know whether there exist any significant mean difference between boys and girls on student engagement and its components, 't' test was carried out and the results are presented in table 2.

Table 2

Mean, Sd, and 't' value of Student Engagement by Sex

Variables	Sex	N	Mean	S D	't' Value
Behavioural Engagement	Boys	112	54.99	6.328	1.80
	Girls	168	56.40	6.499	
Cognitive Engagement	Boys	112	56.79	8.235	2.61**
	Girls	168	59.54	9.152	
Emotional Engagement	Boys	112	57.96	6.685	1.41
	Girls	168	59.18	7.537	
Student Engagement	Boys	112	169.74	18.036	2.33*
	Girls	168	175.11	20.158	

*p< .05, **p< .01

Table 2 gives the mean, S.D, and 't' value of student engagement and its components by sex. From the table 2, it can be seen that student engagement ($t=2.33$, $p< .05$) and the cognitive dimension ($t=2.61$, $p< .01$) of boys and girls were significantly differ. Girls scored (Mean = 175.11) higher than boys (Mean = 169.74) on total engagement. Similarly the cognitive engagement of girls (Mean = 59.54) is higher than that of boys (Mean = 56.79), implying that girl students are having more engagement in their studies compared to boys.

In India, especially in Kerala, government as well as family give much attention to girls education in arts and science subjects and even in the other professional education. In every academic institution, it can be seen that girls are excelling than boys. In olden days society have a notion that females are cognitively poor and they can't make higher level decision. Because of this they were marginalised in many places.

In this study students from different classes like 10th, Plus 1, and Plus 2 were participated and to know whether the class in which they are studying makes any significant differences on their engagement, one-way ANOVA was carried out and the results are presented in table 3.

Table 3
One-Way ANOVA of Student Engagement by Class

Variables	Source of Variance	Sum of Squares	df	Mean Square	F
Behavioural Engagement	Between Groups	0.087	2	0.044	0.001
	Within Groups	11632.356	277	41.994	
	Total	11632.443	279		
Cognitive Engagement	Between Groups	1.147	2	0.574	0.007
	Within Groups	22021.696	277	79.501	
	Total	22022.843	279		
Emotional Engagement	Between Groups	18.115	2	9.058	0.173
	Within Groups	14527.471	277	52.446	
	Total	14545.586	279		
Student Engagement	Between Groups	26.212	2	13.106	0.034
	Within Groups	105881.431	277	382.243	
	Total	105907.643	279		

From table 3, it can be seen that the mean scores of student engagement and its components in the three groups ie 10th, plus 1, and plus 2 were tested for mean differences and found that there is no significance difference between the three groups on any of the student engagement variable and its sub components. It may be because the three groups of students give almost equal important to their studies.

Birth order of a person in a family plays a significant role. Elders and other significant person interactions with the children, attention, care, consideration, and facilities may differ. In much human behaviour this can be seen (eg Anxiety). Here the investigators compared the mean scores of first born, second born and later born on students engagement and its components and the results are presented in table 4.

Table 4
One-Way ANOVA of Student Engagement by Birth order

Variables	Source of Variance	Sum of Squares	df	Mean Square	F
Behavioral Engagement	Between Groups	220.339	2	110.169	2.67
	Within Groups	11412.104	277	41.199	
	Total	11632.443	279		
Cognitive Engagement	Between Groups	523.472	2	261.736	3.37*
	Within Groups	21499.370	277	77.615	
	Total	22022.843	279		
Emotional Engagement	Between Groups	424.126	2	212.063	4.16*
	Within Groups	14121.460	277	50.980	
	Total	14545.586	279		
Student Engagement	Between Groups	3230.078	2	1615.039	4.36*
	Within Groups	102677.565	277	370.677	
	Total	105907.643	279		

*p< .05

From table 4, it can be seen that the mean scores of student engagement and its dimensions for three groups, ie first born, second born and later born were compared using 't' test, it was found that the student engagement differs significantly ($F=4.36$, $p < .05$) among the three groups. Among the dimensions cognitive engagement ($F=3.37$, $p < .05$) and emotional engagement ($F=4.16$, $p < .05$) were found to be significantly different among three groups. Thus birth order plays a significant role in determining student engagement. Normally, first born children showed more engagement in their academic activities because they tend to get more attention, care, love and motivation from their parents. And also parents tend to give first priority (generally) to their first born child than second born and later born.

Influence of Academic Stress and Self Efficacy on Student Engagement

Academic stress as well as self-efficacy of students may significantly influence their engagement in studies. For this the investigator classified the academic stress and self-efficacy of the participants into three categories as low, average and high using the principle mean $\pm 1/2$ SD. To know whether academic stress and self-efficacy are interacting each other on student engagement and its components, 2-way ANOVA was carried out the results are presented in the following tables.

Table 5

Summary of ANOVA of Behavioral Engagement by Academic Stress and Self Efficacy (3 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Academic Stress	136.978	2	68.489	1.741
Self Efficacy	163.421	2	81.711	2.077
Academic Stress * Self Efficacy	182.384	4	45.596	1.159
Error	10658.836	271	39.331	
Total	884568.000	280		

Table 5 shows the results of 2-way ANOVA, to find out the independent and interaction effects of academic stress and self efficacy on behavior engagement. The results revealed that academic stress and self-efficacy of the students were not interacting and independent of each other in the case of behavioural engagement.

Table 6

Summary of ANOVA of Cognitive Engagement by Academic Stress and Self Efficacy (3 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Academic Stress	510.126	2	255.063	3.34*
Self Efficacy	22.990	2	11.495	0.151
Academic Stress * Self Efficacy	190.653	4	47.663	0.625
Error	20681.656	271	76.316	
Total	978148.000	280		

* $p < .05$

Similarly the interaction effect of academic stress and self-efficacy was tested, the results revealed that these two variables are not interacting each other but among academic groups participants cognitive engagement varies ($F=3.34$, $p < .05$). This indicates that students who experience less academic stress show high cognitive engagement than the other two groups. This implies that students should bring down their academic stress considerably then only they will be motivated and regulate their learning.

Cognition is the mental abilities and processes related to knowledge: attention, memory, and working memory, judgment and evaluation, reasoning, problem solving, and decision making. Stress can affect cognition in many ways, with the outcome depending on a combination of factors related to both stress and cognitive function (Sandi, 2013). At the same time studies showed that a minimum amount of stress can improve cognitive functions (Singh & Upadhyaya, 2008).

Table 7

Summary of ANOVA of Emotional Engagement by Academic Stress and Self Efficacy (3 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Academic Stress	18.067	2	9.034	0.181
Self Efficacy	282.607	2	141.304	2.827
Academic Stress * Self Efficacy	179.149	4	44.787	0.896
Error	13545.925	271	49.985	
Total	979104.000	280		

Table 8

Summary of ANOVA of Student Engagement by Academic Stress and Self Efficacy (3 x 3)

Source of variance	Sum of Squares	df	Mean Square	F
Academic Stress	1132.908	2	566.454	1.578
Self Efficacy	721.380	2	360.690	1.005
Academic Stress * Self Efficacy	767.914	4	191.979	0.535
Error	97271.354	271	358.935	
Total	8482568.000	280		

Table 7 and 8 shows the result of two-way ANOVA of academic stress and self efficacy on emotional engagement and student engagement. Results revealed that academic stress as well as self efficacy does not have significant effect on student engagement and emotional engagement.

Conclusion

Student engagement is one of the important variables in academic as well as professional development of a student. If he/she finds the academic activity interesting achievement of the person is definite. Since human behaviour is multifactor many other variables are having significant role. Among them self-efficacy and academic stress were studied. The results revealed self efficacy, student engagement and academic stress were significantly associated. Self efficacy and student engagement was positively correlated; and self efficacy and academic stress were negatively correlated. The other academic variables class of study, birth order were independent of engagement. Student engagement everybody wants very high among students but practically very difficult to achieve. The main reason for this is not addressing other closely associated psycho-educational variables. Once the importance of factors related to the target variable it can be achieved easily. This study revealed the nature and functions of variables associated with the involvement in studies by students. Teachers, counsellors or even management people can make use of this type of finding to improve academic activities of their students.

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