Eurasia Journal of Mathematics, Science & Technology Education, 2007, **3**(4), 363-370

www.ejmste.com

Correlates of Academic Procrastination and Mathematics Achievement of University Undergraduate Students

Mojeed Kolawole Akinsola
University of Botswana, Gaborone, BOTSWANA

Adedeji Tella
Osun State College of Education; Ila-Orangun, NIGERIA

Adeyinka Tella
University of Botswana, Gaborone, BOTSWANA

Received 3 November 2006; accepted 19 April 2007

Procrastination is now a common phenomenon among students particularly those at the higher level. And this is doing more harm to their academic achievement than good. Therefore, this study examined the correlates between academic procrastination and mathematics achievement among the university mathematics undergraduate students. The study used a total sample of 150 part 3 and 4 students in the department of mathematics and mathematics education students in the university of Ibadan and university of Lagos, Nigeria. The 35 items academic procrastination scale developed and validated by Tuckman (1991) was used for the collection of data, in conjunction with the subjects GPA scores till date in mathematics. Findings indicates that: a significant correlation was found in the academic procrastination and academic achievement of the subjects in mathematics, significant difference also exists in the levels of procrastination and mathematics achievement of the subjects, with low procrastinators performing better than the moderate and the high procrastinators. Results further reveals the subjects procrastinate the same way irrespective of their gender. Implications of procrastination on academic achievement of students at all levels generally and some effective ways of remediation of procrastination were suggested.

Keywords: Academic Procrastination, Mathematics Achievement, Academic Achievement, Gender, Undergraduates.

INTRODUCTION

The issue of procrastination is no more something to toy with in academics but something to deal with. This is because procrastinatory behaviour is now a common phenomenon among students particularly at the college and university levels. This is recognised to be doing more harms than good to the academic achievement of the Undergraduate Students most especially the mathematics major.

It is worthy to note that the lives of university students are characterized by frequent deadlines given by university teachers and administrators to carry out various responsibilities such as registration for courses, completion of course forms and submission of class assignments or term papers (Popoola, 2005). A

Correspondence to: Mojeed Kolawole Akinsola , Dr. in Education, University of Botswana, Faculty of Education, Department of Primary Education, P/Bag 00702 Gaborone, Botswana
E-mail: akinsolamk@mopipi.ub.bw

Copyright © 2007 by Moment
E-ISSN: 1305-8223

common form of academic procrastination among students is waiting until the last minute to turn in papers or to study for an examination (Migram, Batin & Mower, 1993). According to (Oweini and Haraty, 1993) college students are notorious for procrastination. They refer to procrastination as the acts of needlessly delaying a task until the point of some discomfort. Procrastination is a behavioural problem that many adults experience on a daily regular basis (Jansen and Carton, 1999) particularly on task which should be completed by a specific deadline (Oweini and Haraty, 2001).

Mathematics is an important school subject because it is associated with more academic and or career opportunities (Akinsola and Tella, 2003). Burton cited in Agwagah and Usman (2003) relates the importance of mathematics to the scientific, industrial, technology and social progress of a society. It is a science that studies numbers, shapes, objects and their properties which are needed as basic requirement for all sciences. That mathematics is an important subject is undebatable. But it is very sad to note that the performance by undergraduate students particularly the majors in the subject in recent time are not encouraging. This can be attributed to the fact that majority of mathematics undergraduate students has been observed to be procrastinators. This is confirmed by the observation by (Ferrari and Beck, 1998) that over 70% of college students engaged in frequent academic procrastination, most commonly with writing term papers.

Procrastination is probably the single most common time management problem (Learning Common Fastfacts Series, 2004). One basic thing about procrastination is that everyone procrastinates to some extent. However, some reasons can be put forward why university students rank highly among those mostly vulnerable to procrastination (Learning Commons Fastfacts Series, 2004). The reasons according to this group are: (i) there is always a tremendous amount of work to do. Regardless of how much time the students spend studying, it can seem impossible to get finished; (ii) for most students, only a few hours each day are spent in class and labs. The majority of time is unstructured, and students are responsible for deciding what to do and when to do it; and (iii) in the university environment, particularly in residence, there is usually something more enjoyable to do than studying. Many activities compete for a limited number of hours in a week, and studying is often pushed to the bottom of the list.

It also recognized that many mathematics students refer to the subjects as being difficult. And the (Learning Commons Fastfacts Series, 2004) have already asserts that procrastination often results when a task seems difficult, unpleasant, or overpowering. It seem reasonable to realise at this point that if the college or university mathematics students continue to procrastinate, definitely the weak manifestation of academic achievement in the subject will as a matter of fact continue. In the light of this, the present study is design to examine the correlates of academic procrastination and mathematics academic achievement of undergraduate students. It will also find out whether there is gender difference in academic procrastination of the students before finally come out with possible ways of remediating the behaviour for effective academic achievement in mathematics courses.

Literature Review

Lay (1986) conceived procrastination as a frequent failure at doing what ought to be done to reach goals. Ellis and Knaus (2002) perceive procrastination as the desire to avoid an activity, the promise to get it late, and the use of excuse making to justify the delay and avoid blame. Popoola (2005) considered procrastination as a dispositional trait which has cognitive, behavioural and emotional components. Noran (2000) defines the term as avoiding doing a task which needs to be accomplished. He explains that one would rather be spending time socializing with friends or relatives rather than working on an important work project that is due soon; or one would rather be watching an exciting movie at the cinema or television rather than study for upcoming quiz or test. Popoola (2005) describes the procrastinator as someone who knows what he wants to do in some sense, can do it, is trying to do it, yet doesn't do it. Solomon and Rothblum (1984) posited that people tend to avoid tasks which they find unpleasant and engaged in activities which are more rewarding, especially with short term over long term gain. Ferrari and Emmons (1995) found that procrastinator have low self esteem and delay task completion because they believe they lack the ability to achieve a task successively. While Popoola (2005) further asserts that an individual postpones doing things that make him or her anxious, apprehensive, or likely to lose face in the presence of peers (Milgram, Dangour and Raviv, 1992). Effert and Ferrari (1989) demonstrate that procrastinators lack self-efficacy, self-esteem and are publicly self-conscious and highly self-critical. The researcher added that procrastinator often have perfectionism expectations, and are over-conscious. They display irrational fear of success or failure which may lead to neurotic avoidance. They may also be emotional, overwhelmed and anxious, having less need for cognitive complexity and are more likely to attribute success to external and unstable factors (Solomon and Rothblum, 1984).

Furthermore, Noran (2000) considers a procrastinator as someone who knows what he/she want to do, is equipped to perform the task, is trying

and planning to perform the task, but does not complete the task, or excessively delays performing the task. To him, the procrastinator will work on less important obligation, rather than fulfilling the more important obligation, or (s) he may use his or her time wastefully in some minor activities or pleasure. In most cases, procrastinators' keep themselves ready to work but avoiding the activity. Procrastination has been found to result from cognitive distortions of faulty thinking (Ellis and Knaus, 1977) and also related to problems of perceiving and estimating time (Aitken, 1982). Noran (2000) explains that procrastinator in the first category often has perfectionist expectations and is over-conscious. They believed to fear success or failure which eventually leads to neurotic avoidance. They lack self-efficacy and self-esteem, and are self-conscious and self-critical. While however, impulsive procrastinators' may fail to pick up cues from the environment (Ferrari and Emmons, 1994). Reasons put forward as relate to this category of procrastination include the inability to delay gratification of pleasure lacking self-control, lacking motivation for achieving targeted goals, and lacking energy or organizational abilities. Ferrari and Emmons (1995) emphasized that researchers have identifies different types of academic procrastination, such as low conscientiousness and anxiety-related procrastination. Academic procrastinators typically make four cognitive distortions which promote and maintain their task avoidance. These are: overestimation of time left to perform task, underestimation of time require completing tasks; overestimation of future motivational states; misreliance on the necessity of emotional congruence to succeed at task, and belief that working when not in mood to work is sub-optional (Noran, 2000).

This review will not be completed without stating the causes of procrastination. According to Noran (2000) the literature has reveals several causes for procrastination. He identifies the following as the possible causes.

Time Management-To him, someone who procrastinates suggests he/she is unable to manage time wisely. It implies uncertainty of priorities, goals and objectives. There is also a feeling of overwhelms doing a certain task. Subsequently, one postpones doing academic assignment for a certain data, while focusing on unproductive activities.

Inability to concentrate or having low levels of conscientiousness or ones work is a second reason for procrastination- This difference may be due to distortions in the environment, such as noise, cluttered study desk or trying to do an assignment on a bed. A third factor for procrastinating is the fear and anxiety related to failure. A person in this category would spend more time worrying about forthcoming tests and projects rather than plan for it and completing them. Negative belief about ones capability is another reason to procrastinate. - Unrealistic expectation and perfectionism may also be another blocking hurdle for procrastination.

Tucuman's (1990) review summarized research findings on causes of procrastination as follows: "disbelieving in ones own capability to perform a task; being unable to postpone gratification, and assigning blame to external sources" p4). Procrastination is also associated with high levels of stress, low self-esteem, low self-efficacy, self-denigration, lower level of resourcefulness', higher levels of self-conscouiousness, self-handicapping and depression (Flet, Blankestein, & Martin 1995).

Research findings on the proportion of students who procrastinate have not been consistent (Popoola, 2005). For instance, while Solomon and Rothblum (1984) estimated that at least half of all students consistently and problematically procrastinate, Ellis and Knaus, (1977) found that the number of students who procrastinate at some point approaches 95%. Similarly a review by Ferrari and Beck (1998) reveals that students engage in frequent procrastination and this occurs regardless of race or gender. In a study of 374 undergraduate students by the procrastination research group at Carleton University in Ottawa, it was found that procrastination is related to not only higher stress and poor coping strategies, but also avoidance behaviours (Sirois and Pychyl, 2002). It was reveals from the study that students who suffer from these avoidance coping styles resist completing assignments and addressing other deadlines that evoke tension and anxiety. Tuckman (2003) research on study skills demonstrates that by teaching students' specific learning and motivational strategies it is possible to modify avoidance behaviour. The study compared a group of 397 students who completed Tucumán's semester long course, Individual Learning and Motivation (ILM) to a group of 397 students who did not enrol in the course. Those students who received the strategy training earned significantly higher GPAs .48 point higher than those who did not complete the training.

In conclusion therefore, it is not an overstatement to state that procrastination may have debilitating effects on university students' performance particularly the mathematics majors. The finding by (Tice and Baumeister, 1997) that procrastinators received significantly lower paper and examination grades than non-procrastinators is very relevant here. Perhaps evidence abounds in research studies that procrastination is usually result to poor academic performance (Tuckman, Abry, and Smith, 2002; Beck, Koons and Morgan, 2000 and Wesley, 1994). It is on this note that the present study is design to find out the correlation between academic procrastination and mathematics academic achievement; and in addition

examine whether gender difference exist in academic procrastination among the mathematics students in a population of Nigerian undergraduate students where study of this kind is not common. To achieve the objectives of this study, the following hypotheses were generated:

1. There will be no significant correlation between procrastination and mathematics academic achievement.
2. There will be no significant difference in the academic achievement of the Participants based on their level of procrastination(Low, Moderate and High)
3. There will be no gender difference in the academic procrastination of the participants.

METHOD

The study adopted a causal descriptive research design approach. This does not involve the manipulation of any variables. It only carefully observes and records information about the population as it naturally occurred during the time the study was conducted.

The population of the study comprises150 part 3 and 4 students who were selected through a total enumeration sampling method from the department of mathematics and mathematics education of the University of Ibadan and University of Lagos, Nigeria. Despite the use of total enumeration in the sample selection, the sample was still small. This is based on the consideration by many students that Mathematics is difficult which make many of them to be running away from the course. The two cities are the most populous town in Nigeria where stress factors could be a major hindrances to academic achievement .The age of these participants ranged from 20-36 years with a mean age of 24.6years.

A validated academic procrastination scale comprises of 35 likert type items developed by Tuckman (1991) with the original reliability coefficient of r =. 90 Cronbach alpha was used for the collection of data on academic procrastination. This instrument was revalidated before use and the Mathematics students of Obafemi Awolowo University, Ile Ife, Nigeria were used to determine the reliability of the questionnaire which gave an r = .88 through the same cronbach alpha.

The participant grade performance average GPA in mathematics till date was taken from their academic record. This represents the participants' academic achievement scores.

All the participants were administered the Tuckman Academic Procrastination Scale in a classroom under normal examination situation. This was to reduce the mortality rates of the instrument and interaction of the participants which may distort the results of the study. Data collected on the study were analyzed using Pearson product moment correlation, analysis of variance, and multiple comparison and t-test statistical tools.

RESULTS

The results of the analysis are presented as follows: Hypothesis 1: There will be no significant correlation between academic procrastination and Mathematics academic achievement.

Table 1 above shows that there is significant correlation between academic procrastination and Mathematics academic achievement with r= 0.82. This implies that the more the subjects procrastinate the more their achievement in mathematics diminished or decreased.

Hypothesis 2: There will be no significant difference in the academic achievement of the subjects based on their level of procrastination (Low, Moderate and High).

Table 1. Correlation between Procrastination and Mathematics Achievement

Variables	N_o	X	SD	r	P
Aca.Procastination	150	49.5	14.8		
Maths Achievement	150	47.6	13.6	0.82	<0.05

Table 2. Level of Procrastination and Mathematics Achievement

Source of variance	Sum of squares	df	Mean squares	F	P
Between Groups	82.66	2	41.33		
Within Group	280.28	147	1.58	26.2	<0.05
Total	362.94	149			

Table 3. Multiple comparison of Mathematics Achievement of the Subjects and Their Level of Procrastination.

Level of procrastination	No	X	SD	Mean Difference	Std.Error	P
Low procrastinator	42	3.44	0.53			
Moderate Procrastinator	58	2.65	0.78	0.79*	0.131	<.05
Low procrastinator	42	3.44	0.53			
High Procrastinator	50	2.53	0.33	0.94*	0.86	<.05
Moderate Procrastinator	58	2.65	0.78			
High Procrastinator	50	2.53	0.33	0.12	0.111	>.05

Table 4. Gender Difference and Academic Procrastination.

Variables	No	X	SD	df	t.obs	t.crit.	P
Male	85	56.2	10.2	148	0.19	1.96	0.05
Female	65	55.9	9.8				

Table 2 above shows that there is a significant difference in the level of procrastination and Mathematics academic achievement of the subjects with F.obs= 26.2*at P< 0.05 with 2 degree of freedom.

To identify the procrastinating group that has a better achievement over the other, t-test analysis was carried out in pairs. The result is shown in table 3.

From the table 3 above low procrastinators had a mean CGPA of 3.44and a standard deviation of 0.53 while moderate procrastinators had a mean of CGPA of 2.65 and a standard deviation of 0.78. The difference between the mean values of the two groups (0.79) is statistically significant at 0.05 levels. This indicates that a significant difference exists between the academic achievement of low and moderate procrastinators with low procrastinators performing better than the moderate procrastinators. Furthermore, data on the CGPA of low procrastinators (x =3.44, SD.0.53) were compared with those of high procrastinators(x= 2.53, SD = 0.33). This analysis showed a mean difference of 0.94, which is significant at 0.05 levels. This indicates that the academic achievement of low procrastinators as measured by their GPA were better than those of high procrastinators (P<.05). On the other hand, another comparison of the mean GPA of moderate (X=2.65, SD= 0.78) and high procrastinator (X=2.53, SD =0.33) showed a mean difference of 0.12 which is not significant at 0.05 level. This perhaps suggests that the academic achievement of moderate and high procrastinators is not different since the moderate procrastinators recorded a higher GPA than the high procrastinators.

Hypothesis 3: There will be no significant gender difference in the academic procrastination of the participants.

Table 4 shows that no gender difference exists in the procrastinatory behaviour between male and female. This is shown with t.obs = 0.19 > t.crit. 1.96 At 0.05 level and 148 degree of freedom. This implies that both male and participants exhibit the same level of academic procrastination, and this is affecting them accordingly.

DISCUSSION

Inspired by the need to improve student performance in mathematics courses, the purpose of this study was to determine if procrastination do affect students achievement in mathematics at the university level. The first hypothesis tested that there is no significant correlation between procrastination and mathematics achievement was not supported. In other words, the result indicated that there is a significant correlation between mathematics achievement and procrastination. The result of this study is supported by the findings of Beswick, Rothblum, and Mann (1986) which found that procrastination was correlated with

low self-esteem and anxiety in high school students. Tice and Baumeister (1997) also reported that students who have strong tendencies to procrastinate tend to have low examination grades than non-procrastinators. The report by Popoola (2005), Wesley (1994), Beck, Koons and Migram (2000), and Tuckman, Abry, and Smith (2002) that procrastination is associated with poor academic achievement corroborate with the findings of the present study. The reason for lower academic performance of students who procrastinate might be due to their low levels of self-esteem and self-efficacy.

The result of the study also indicated that there is a significant difference between procrastination and mathematics achievement, with student with low procrastination having a higher achievement in mathematics than students with moderate and high levels of procrastination. This has a very significant implication for the quality and number of students that will be available for higher studies in the area of mathematics.

In an increasingly technological society, where knowledge of mathematics is needed to obtain a desired position in workforce, this means that students who procrastinate in the learning of mathematics are likely to limit their career choices to those that do not require mathematical skills. Going by the findings of Ellis and Knaus (1997) that ninety five percent of college students procrastinates; it becoming more serous in this age where mathematical knowledge are not only needed in scientific and technical fields but increasingly important in business, social sciences and even humanities.

The hypothesis that gender would have an effect on academic procrastination was not supported by the result. The result indicated that academic procrastination is independent of gender. This means that both male and female procrastinate in like manners. This corroborates the view of Ferrari and Beck (1998) that procrastination is no respecter of gender. Tuckman (1991) assert that procrastinators tend to describe themselves as people who doubt their capabilities and each gender unit have it own share of such people.

The levels of procrastination could also have been affected by the type of students' characteristics. Valadez (2006) have identified three types of students, as the unconcerned students, target- oriented students and passionate students. According to them, unconcerned students objective is that they just want to pass the class, look for easiest way, and are apathetic about studying. Such student exercise behaviours such as they does little studying or reading, look for help at the last minute, memorizes information, reproducing statements from source text, sometimes cheats ,and goofs in class. Indeed such students certainly do not take study seriously and may never pay attention to proper time management which is a source of academic procrastination.

The target-oriented student objectives are to get good grades and commit to reach that goal and exercise behaviours such as focusing on difficult tasks, do everything the instructors' wants, completes all assignments, manage time carefully, and gets help when needed. These types of students might have very low level of procrastination thereby performing well in their mathematical tasks or whatever tasks that comes their way.

The passionate student objectives are enthusiasm about learning for its own sake and exhibits behaviour such as focusing on the subject, reads widely, associates new ideas to previous knowledge, discusses the topic whenever possible, seek enlightment in other books and sources. This set of students will leave no stone unturned in their search for knowledge and thereby perform exceptionally well in their academic task. There is no room for procrastination in their daily work ethics.

When student manage time judiciously, taken time as precious commodity, periodically observing and modifying the use of it, procrastination may be reduced to the minimum. Such a student is likely to make sure that he/she is in the right class and have the proper prerequisites, and will be willing to review previous mathematics topics already forgotten which may be critical to the understanding of the new learning. In addition a student with low level of procrastination may also be involved in studying with classmate, teaching each other the principle involved and discussing difficult mathematics concepts, and reading the textbooks for additional information and examples. On the other hand, students with high levels of procrastination are not likely to take their studies seriously thereby engendering poor performance in mathematics grade. Since there is always not enough time to cover all aspects of a mathematics course in the classroom, procrastinators may not have the time to exert considerable effort outside of class to learn basic ideas about the subject matters from the textbooks. This invariably may lead to poor understanding of concepts, hence low mathematics grade.

Since procrastination isn't simply a habit, but complex pattern of recurring behaviours which includes emotions, thought, and actions and has becomes habitual to the procrastinator, getting rid of it will involve replacing, circumventing or deactivating each one of the habits by new habits (Wikibooks, 2006). Getting rid may not be that easy because a simply decision could easily be overwhelmed by the force of habit and such a decision need to be implemented as a habit itself before it can compete effectively with the old habit. For a student to be able to confronts and control his procrastinating behaviour the first stage is to look at self critically and determine the distractive and

incompetence attributes that negates his positive behaviours towards his academic activities. Procrastination as a form of incompetence has to be eliminated in order to cure it. Since incompetence is the opposite or lack of competence, the only way to eliminate it is to be replaced with competence (Wikibooks, 2006). Personal competence is comprised of five elements: emotional strength, well-directed thought, time management skills, control over habits, and task completion abilities (Wikibooks, 2006). Improving on these personal competences is a surest ways of overcoming procrastination.

Some of the practical steps are for the students to be well organized by starting out small to accomplish the larger goal. In order words a student may need to prepare a scale of daily preferences dividing major projects which seems overwhelming into little pieces.

What is not getting done in one day can be added to the next day's list

Also a procrastinator may need to start with the easiest task and proceed from there to a more rigorous and demanding tasks. Success in the easier task is likely to motivate and ginger him to more difficult task and hence building up confidence in his ability to tackle academic matters. One of the major reasons why people avoid the very tasks that free them from mediocrity is their lack of self confidence (Plessis, 2006). A lack of confidence in one self according to (Plessis, 2006) will automatically keep one from those things which ordinarily one is capable of doing. Procrastination which is not just a device for avoiding mundane things but on a higher level, is avoiding the big decisions and big actions then set in and prevent one from making real difference in one's life.

REFERENCES

Agwagah and Usman (2002) .Training of undergraduate teachers in Nigerian Universities: Focus on problems of effective integration and attitude of students to computers in mathematics instruction. {Online}Available at http://www.math.uocgr/~ictm2/Proceeding/gap119pdf

Aitken, B (1982). *A Personality Profile of The College Students' Procrastination*. Unpublished Doctoral Dissertation, University of Pittsburgh.

Akinsola, M.K. & Tella, A. (2003).Effectiveness of individualistic and cooperative teaching strategies in learning geometry and problem solving in Mathematics among junior secondary schools in Nigeria. *Personality Study and Group Behaviuor* 23, 95-105.

Beck, B.L. & Koons, S.R, Migram, D.L. (2000).Correlates And Consequence of Behavioural Procrastination: The Effects of Academic Procrastination, Self-Consciousness, Self-Esteem, And Self-Handicapping. *Journal of Social Behaviour and Personality* 15, 3-13.

Beswick, G., Rothblum, E.D., and Mann, L. (1988). Psychological Antecedents to Student Procrastination. *Australian Psychologist*, 23: 207-217

Effert, B.R. & Ferrari, JR. (1989).Decisional procrastination, examining personality correlates. *Journal of Social Behaviour and Personality* 4,151-156.

Ellis, A. & Knaus, W.J. (2000).*Overcoming Procrastination*. New York: New American Library.

Ellis, A, &Knaus, W.J (1977).*Overcoming Procrastination*. New York. Institute for Rational Living.

Ferrari, J.R., &Beck, B.L. (1998).Affective responses before and after fraudulent excuses by academic procrastinator. *Education*, 118(4), 529-538.

Ferrari, J.R., & Emmons, R.A. (1995).Methods of procrastination and their relation to self-control and self-reinforcement: An exploratory study. *Journal of Social Behaviour and Personality* 10,135-142.

Ferrari, J.R., &Emmons, R.A. (1994).Procrastination as revenge: Do people report using delays as a strategy for vengeance? *Personality and Individual Differences* 17, 539-544.

Flet, G.Blankenstein, K.R., & Martin, T.R. (1995). Procrastination, negative self-evaluation, and stress in depression and anxiety: A review of preliminary model. In J.R Ferrari's, Johnson W.G & McCown (Eds). *Procrastination And Task Avoidance: Theory, Research, and Treatment* pp.137).New York; Plenum Press.

Jansenn, T. & Carton, J.S. (1999).The effects of locus of control and task difficulty on procrastination. *Journal of Genetic Psychology*, 160.

Lay, C. (1986).At last, my research article on procrastinator. *Education* 118(4), 529-538.

Learning Common s Fast facts Series (2004).Controlling procrastination. {Online}Available at http://www.learningcommons.uoguelph.ca (Accessed on 10th November, 2006).

Learning Common Fastfact Series (2004), Procrastination. Retrieved from http://www.learningcommons.uoguelph.ca/Fastfacts-Procrastination.pdf Accessed on15th July, 2006

Milgram, A.; Batin, B. & Mower, D. (1993).Correlates of academic procrastination. *Journal of School Psychology* 31,487-500.

Milgram, N.A. Dangour, W. &Raviv, A (1992).Situational and Personal determinants of academic procrastination. Journal of General Psychology 119, 123-133.

Noran, F.Y (2000).Procrastination among students in institutes of higher learning: Chalenges for K-Economy. Available at: http://www.mahdzan.com/papers/procrastinate/ Accessed on 17th November, 2006.

Oweini, A. & Harraty, N (2005).*The carrots or the stick: What motivate students?* A Manuscript. Lebanese American University. USA.

Plessis, D (2006). Self confidence, fear and the inevitable procrastination. Retrieved at http://www.self improvement-gym.com on 11th November 2006.

Popoola, B.I. (2005).A study of the relationship between procrastinatory behaviour and academic performance of undergraduate students in a Nigerian University. African Symposium: An Online Journal of Educational Research Network. Available at http://www2.

ncsu.edu/ncsu/aern/TAS5.1.htm (Accessed on 10th November, 2005).

Sirois, F.M. & Pychyl, T.A (2002).Academic procrastination: Cost health and well-being. Presentation at APA convention, August 22, 2002, Chicago, Illinois. Slides available at http://www.carleton.ca/~typcyl/prg/conferences/apa2002/apaslides2002/sld001.htm

Solomon, L.J. &Rothbluam, E.B. (1984).Academic procrastination: Frequency and Cognitive behavioural correlates. *Journal of Counselling Psychology* 31,503-509.

Tice, D.M, &Baumeister, R.F. (1997).Longitudinal study of procrastination, performance, stress and health: The costs and benefits of dawdling. *Psychological Science* 18,454-458.

Tuckman, B.W. (2003).The effects of learning and motivation strategies training on College Students' achievement. Journal of College Student Development,44 (3), 430-437.

Tuckman, B.W.; Abry, D.A. &Smith, D.R (2002).*Learning and motivation strategies: Your guide to success*. Upper Saddle River, N.J: Prentice-Hall.

Tuckman, B.W. (1991). The development and concurrent validity of the procrastination scale. *Educational and Psychological Measurement* 51(2), 473-480.

Tuckman, B.W. (1990).Group versus goal setting effects on the self-regulated performance of students differing in self-efficacy. *The Journal of Experimental Education* 58, 291-298.

Valdez (2006). Math study skills: 12 steps to success in math. Retrieved November 10 http://www.rock.uwc.edu/academics/trio/Math.pdf

Wesley, J. (1994).Effects of ability, high school achievement and procrastinatory behaviour on college performance. *Educational and Psychological Measurement* 54, 404-408.

Wikibooks (2006). *Overcoming Procrastination/Causes*. Retrieved from: http://en.wikibooks.org/wiki/Overcoming_Procrastination

