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SELF-REGULATED LEARNING, MOTIVATIONAL BELIEFS AND ACADEMIC PROCRASTINATION AMONG ADULT E-LEARNERS

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Abstract

The current study aimed to investigate the mediating role of motivational beliefs in a relationship between self-regulated learning and academic procrastination among e-learners. Despite many advancements in e-learning, students face many issues due to online teaching method. Academic procrastination is one of the significant issues. In the present study, researchers explore the role of self-regulated learning and motivational beliefs in reducing academic procrastination of e-learners. Data was collected from university students comprised of 381 (M=132, F=249 age range 21-45) and they filled the measurements included self-regulated learning questionnaire, MUSIC inventory and academic procrastination scale. Findings revealed that self-regulated learning and components of MUSIC inventory of motivation were negatively correlated with academic procrastination. It has been found that success and usefulness (components of MUSIC inventory) play a mediating role between self-regulated learning and academic procrastination. This study would help university teachers to motivate students in order to monitor their learning activities.

Keywords

Academic procrastination, Self-Regulated Learning, Motivational Beliefs, E-Learners.

1. Introduction

Over the last several years, Information and Communication Technology (ICT) has become the most important part of our social interaction. Now, this era is considered as an era of technology. With advancements in information technology, electronic learning i.e., e-learning concept has evolved. E-learning refers to such type of learning in which learning approach used in classroom based learning is different. There are several previous researches conducted on e-learners/distance education learners to know their perceptions about using LMS, learning, academic performance and etc. yet little is known about academic procrastination of e-learners. The present study aimed to address the important academic issue and ways to reduce it. Academic procrastination is one of the major issues of today's students. It is a phenomenon which refers to a delay / postpone the academic activities such as classroom assignments, projects and other assessment activities by students. It causes serious problem in meeting their deadlines. There are several reasons to procrastinate the academic activities by students. In this regard, Afzal and Jami (2018) found that students procrastinate due to several reasons such as lack of initiative skills, task aversiveness, lack of decision making and etc. It was also revealed that students with low self-efficacy usually procrastinate more as compared to students who are with high self-efficacy. Researcher is teaching in an online university. She observed that students' rational beliefs play an important role in task completion. A similar study conducted by Balkis (2013) found that motivational beliefs about studies lead towards achieving satisfaction in academic life which in turn increases the academic achievement of students. On the other hand, academic procrastination is negatively associated with motivational beliefs. Another study conducted by (Babu *et al*., 2019) used the term behavioral self-handicap for procrastination. They examined the relationship between academic procrastination and self-esteem and found that students with high self-esteem complete the academic tasks without unnecessarily delays while low self-esteemed students procrastinate more. Findings were supported by phenomenological approach. According to this approach, students do not motivate themselves due to external rewards. It is the mainly thinking part of the students which propel them to do task. If students find themselves incapable to perform a certain task then they cannot perform the task and cannot regulate their learning behavior (Zimmerman & Schunk, 2012). Teachers can play their effective roles in modifying the thinking pattern of students. Self- regulation can play an important role in reducing academic procrastination of e-learners. In this regard, a study conducted by Panadero (2017) stated that self-regulated learning comprises of three phases. First phase is preparatory phase in which students gather information about the task, motivate them to perform the tasks and prepare themselves of how to perform the task in an effective manner. Second phase is performance phase. During this

phase, students perform the tasks at hand. Third phase is appraisal phase and students evaluate their performance for future times in order to achieve higher performance. Students can evaluate the task either they will perform the task in future or not. They will think about the significance of the performed tasks. McCombs (1986) suggested teachers that they must train their students regarding what they feel and think while learning. It will help students to keep themselves on track while learning. They enable to know, monitor and self-regulate their learning process. A similar study conducted by Rogers (1951) put similar criteria like phenomenologist about self-regulated learning approach of students. According to Rogers, teachers should evaluate self-awareness of students about learning in terms of their perceptions rather than any external criteria (Zimmerman &Schunk, 2012). Students' self-regulation is also affected by many other factors. In this regard, Dale Schunk (1994) in his theory on self-regulation found that student's effort to regulate his learning is not only due to personal processes but it is also affected by behavioral and environmental factors. For instance, if a student prepares himself for some test and some reading material is added by teacher before one day of test then student may not get enough time to prepare himself for the test. Due to this, he may experience anxiety as well (Zimmerman &Schunk, 2012). In the current study, motivational beliefs play a mediating role between self-regulated learning and academic procrastination. It plays an effective role in reducing academic procrastination and increasing self-regulated learning. Motivational beliefs refer to those reasons which motivate an individual to accomplish a certain task. There are motivational beliefs such as self-efficacy beliefs, task value beliefs and goal orientation. Motivational beliefs have an important role in a student's success. There are various theories which define these beliefs (Wolters& Rosenthal, 2000). Self-efficacy is one of the important factor of enhancing students' motivation. Self-efficacy refers to an individual's belief to accomplish a certain task. High self-efficacious students can do tasks more effectively than students with low self-efficacy. Such beliefs have a direct effect on a student's academic achievement. A similar study conducted by Gaskill and Murphy (2004) found that those students who have a belief that they can easily attempt mathematical problems did these tasks more effectively than those students who were with low self-efficacy beliefs. Self-efficacious students are usually involved in goal oriented activities. In this regard, Bandura (1986) proposed in his social cognitive theory that students who are highly self-efficacious usually engage themselves in goal settings. They regulate and monitor their performances. There are different factors which contribute in formation of positive self-efficacy. Individuals usually boost their self-efficacy by getting feedback from others regarding their performances. For instance, a student can get feedback from his teachers and friends of how to improve his performance. Their positive feedback usually encourages him to put belief on his capabilities. Students can also develop self-

efficacy through social persuasion. Persuaders play a significant role in developing student's self-efficacy. If a student's parents say that 'you can certainly get a good grade' then he would surely get it. Positive feedback has a positive impact on a student's performance. Likewise, negative persuaders usually play a negative role and students lose their sense of capability to perform a certain task. Individuals' emotional state also plays an important role in developing and fostering self-efficacy beliefs. If a student has negative emotional state such as fear regarding a task's completion then he would not be able to complete that task. Likewise, if a student has high arousal level to complete a certain task then he would be able to complete that task in an effective manner (Bandura, 1986). Bandura (1977) also proposed types of self-efficacy. Collective self-efficacy refers to a group or a team belief to get success in a certain task, for instance, if teachers of a college have a belief that their students can perform well in exam. Instructional/teacher self-efficacy is another type of self-efficacy in which teachers have a belief that they can give better learning opportunities to students. It was found that teachers with high self-efficacy usually design activities to students that are challenging ones as compared to low self-efficacious teachers (Bandura, 1977). There are various factors which influence on the development of self-efficacy. One of them is family. Families that are rich in providing resources to their children then their children are keen to learn new things. Moreover, if parents are educated and have a good social network then those parents usually stress more on effective education of their children. Furthermore, prior experiences of students also play an important role. If a student gets praise in getting good grades then it would certainly have positive effect on his self-efficacy and it is likely that students would perform well in the future (Bandura, 1997). Like self-efficacy theory, equity theory also proposes the concept of motivation. Equity theory perceives that input/output ratio in comparison to others. If we relate this theory in educational settings, then we may come to know the students who put efforts is their input and what they get rewards as a result of their efforts is output. Students start comparing their input/output ratio with other students (Bandura, 1997).

1.1 Hypothesis

H1: High level of self-regulated learning and motivational beliefs would be associated with lower level of academic procrastination among adult e-learners.

H2: High level of self-regulated learning and motivational beliefs would likely to predict a lower level of academic procrastination among adult e-learners.

H3: Motivational beliefs of adult e-learners is likely to mediate the relationship between self-regulated learning and academic procrastination

2. Method and Materials

Aim of the current study was to find the relationship between self-regulated learning, motivational beliefs and academic procrastination among adult e-learners. Therefore it was also to investigate possible predictive role

of self-regulated learning and motivational beliefs in reducing academic procrastination among adult e-learners. To investigate mediating role of motivational beliefs in relationship between self-regulated learning and academic procrastination among adult e-learners

2.1 Assessment Measures

In current research three measures along with demographic information sheet was used.

2.1.1 Self-Regulated Learning Questionnaire

The study used self-regulated learning questionnaire which was developed by EdaÖz and ŞenayŞen (2018). Its purpose was to measure self-regulated learning strategies adopted by students. It consists of 39 items and five subscales. The items in the scale were graded as "never = 1", "rarely = 2", "occasionally = 3", "mostly = 4", "always = 5" in accordance with the five-point Likert type. Its sub-scales are 1). Studying Method, 2) Self-Evaluation, 3) Receiving Support, 4) Time Management and Planning and 5) Seeking Information. Its scoring can be done in two ways. Sub-scales can be computed separately and total items can be computed. All items are positively worded items except item 35 i.e., negative worded items. The scale Cronbach alpha value is .94 (EdaÖz, 2018).

2.1.2 MUSIC Inventory

MUSIC inventory was developed by Jones (2018) in order to measure different components of motivation for this particular study. It consists of 26 items and 5 sub-scales. Su-scales are named as Empowerment, Usefulness, Success, Interest and Caring. Empowerment and usefulness sub-scales comprises of 5-items. Success consists of 4 items while interest and caring consist of 6 items. Its scoring is to compute each sub-scale separately as it is assumed a meaningless to compute all sub-scale and get a total of scale. The items in the scale were graded as "strongly disagree = 1", "disagree = 2", "somewhat disagree = 3", "somewhat agree = 4", "agree = 5 and strongly agree=6" in accordance with the six-point Likert type scale. All items are positively worded items. Cronbach alpha values for empowerment is .90, usefulness is .94, success is .89, interest is .93 and caring is .91(Jones, 2018).

2.1.3 Academic Procrastination Scale

Academic procrastination scale was developed by Bashir and Gupta (2019) that was particularly used for the current study. It consists of 23 items. It consists of four subscales. Sub-scales are named as 1) Time Management 2) Task Aversiveness 3) Sincerity and 4) Personal Initiative. Time Management consists of 06 items, Task Aversiveness consists of 05 items, Sincerity consists of 07 items and Personal Initiative consists 05 items. Scale consists of both items i.e., positive worded items and negative worded items. The items in the scale were graded as "strongly disagree = 1", "disagree = 2", "neutral = 3", "agree = 4", "strongly agree = 5 " in accordance with the five-point Likert type scale. There found a higher level of positive correlations among all dimensions of academic procrastination. Convergent validity of the scale ranges from .657-.731. Internal consistency was

determined by alpha value that is .89 (Bashir and Gupta, 2019).

2.1.4 Demographic Information Sheet

It consists of gender, age, number of siblings, discipline, degree program, city, campus, birth order, living status, work status, job nature, family system and family income whereas it is represented in figure 1.

Table 1: Descriptive of Sample Characteristics (N=381)

Variables	*M (SD)*	*f (%)*
Age	25.95(6.2)	
Gender		
Male		132(34.6)
Female		249(65.4)
Birth Order		
First Born		117(30.7)
Middle Born		169(44.4)
Last Born		93(24.4)
Only Child		2(.5)
Living Status		
Rural		129(33.9)
Urban		252(66.1)
Work Status		
Employed		167(43.8)
Unemployed		214(56.2)
Family System		
Joint Family System		192(50.4)
Nuclear Family System		189(49.6)

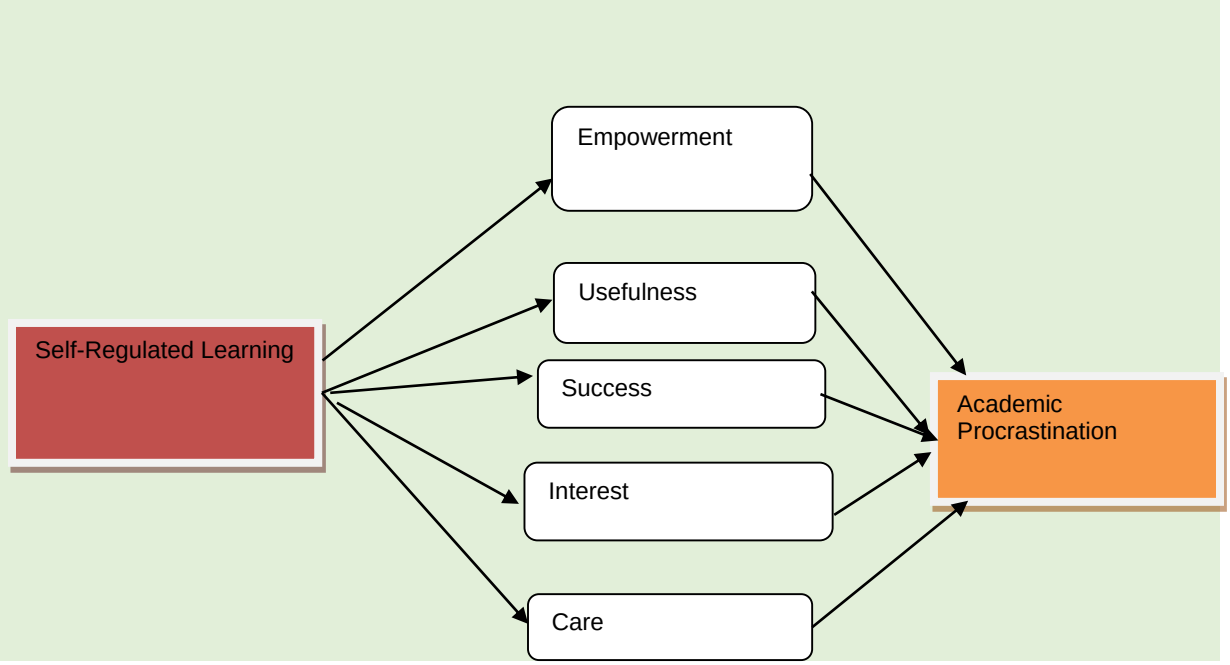

Figure 1: Conceptual Framework of the Study

3. Procedure

Participants were approached via online Google form. Demographic sheet which was prepared by researcher consists of participant's age, gender, degree program, discipline, educational institute, living status, family system, monthly income, marital status, nature of job and job experience (if any), GPA in the last semester. Participants were given booklet comprised of Demographic sheet, AP scale, SRL questionnaire and MUSIC Inventory via online. Google form was emailed to 500 participants, among them 3 were discarded because of not fulfilling the inclusion criteria and 4 questionnaires were left unfilled. Finally a data of 381 participants was obtained. Average response rate was 80%. At the end, gratitude was shown to participants for their participation and time.

4. Results

The current research was conducted in order to investigate the mediating relationship of motivational belief with self-regulated learning in reducing academic procrastination.

Table 2: *Psychometric and Descriptive Analysis of Academic Procrastination, Self-Regulated Learning and Motivational Beliefs (N=381).*

Variables	*k*	*M (SD)*	Range		α
			Actual	Potential	
AP	23	148.24(24.83)	43-92	43-92	.71
SRL	39	65.23(8.55)	43-193	43-193	.94
Empowerment	05	20.41(2.44)	9-35	9-35	.73
Usefulness	05	20.98(2.68)	5-25	5-25	.84
Success	04	16.66(1.79)	8-20	8-20	.69
Interest	06	24.37(3.47)	6-30	6-30	.86
Caring	06	24.69(3.21)	6-30	6-30	.82

Note: k=No. of items, α=Cronbach's Alpha value, M=Mean, SD= Standard Deviation, AP=Academic Procrastination, SRL=Self-Regulated Learning

Table 3: *Summary of Correlations for AP (Academic Procrastination), SRL (Self-Regulated Learning and MUSIC Inventory (N=381)*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CGPA	-	-.13	.06	-.07	-.03	-.08	-.08	-.12	.13*	.10*	.07	.07	.03	.13**	.01
Time Management		-	.31**	.47**	.35**	-.25**	-.12*	-.02	-.13*	-.15**	-.08	-.12*	-.15**	-.13**	-.09
Task Aversiveness			-	.26**	.22**	-.27**	-.21**	-.25**	-.24**	-.21**	-.20**	-.19**	-.16**	-.20**	-.21**
Sincerity				-	.28**	-.28**	-.17**	.05	-.25**	-.12**	-.12**	-.13*	-.18**	-.12*	-.06
Personal Initiative					-	-.33**	-.23**	-.06	-.16**	-.26**	-.18**	-.24**	-.29**	-.19**	-.17**
Studying Method						-	.77**	.47**	.78**	.54**	.38**	.38**	.41**	.44**	.35**
Self-Evaluation							-	.55**	.76**	.59**	.39**	.40**	.41**	.42**	.36**
Receiving Support								-	.55**	.43**	.29**	.29**	.22**	.30**	.36**

Time Management and Planning	-	.49**	.31**	.34**	.29**	.45**	.33**
Seeking Information		-	.25**	.34**	.37**	.35**	.24**
Empowerment			-	.58**	.66**	.56**	.67**
Success				-	.64**	.72**	.59**
Interest						-	.55**
Caring							-

Note. *p< .05, **p < .01, ***p< .001

The result of Pearson product moment correlation showed that there were significantly negative relationship found between sub-scales of academic procrastination i.e., (Time Management, Task Aversiveness , Sincerity and Personal Initiative) and sub-scales of self-regulated learning i.e., (Studying Method , Self-Evaluation, Time Management and planning and seeking information) whereas there was found no significant relationship between sub-scales of academic procrastination i.e., (Time Management, Task Aversiveness , Sincerity and Personal Initiative) and sub-scale of self-regulated learning i.e., (Receiving Support). Moreover, there was found significantly negative relationship between sub-scales of academic procrastination i.e., (Time Management, Task Aversiveness, Sincerity and Personal Initiative) and sub-scales of motivational belief i.e., (Usefulness, Success and Interest) while there was found no significant relationship between sub-scales of academic procrastination i.e., (Time Management, Task Aversiveness, Sincerity and Personal Initiative) and sub-scales of motivational belief i.e.,(Empowerment and Caring). Meanwhile, there were found significantly positive relationship between sub-scales of self-regulated learning i.e., (Studying Method, Self-Evaluation, Time Management and planning, Receiving Support and seeking information) and sub-scales of motivational belief i.e.,(Empowerment, Usefulness, Success and Interest and Caring). Moreover, it was found a positive relationship between CGPA and interest (component of MUSIC Inventory).

Table 4: *Hierarchical Regression Analysis for Variables Predicting Academic Procrastination (N=381)*

Variables	Academic Procrastination	
	ΔR^2	**β**
Step 1	.087***	-
Control Variables*	-	-
Step 2	.044***	-
Self-Regulated Learning	-	-.246***
Total R^2	.490***	-

Note. ** Control Variables included empowerment, interest, usefulness, caring, success and CGPA*

Assumption of Independence of residuals was assumed as Durbin Watson value is 1.86 which lie between 1-3 whereas assumption of multicolinearity was assumed as Tolerance value is greater than .2. Furthermore, assumption of normality of residuals was relatively assumed as distribution of residuals was relatively normal. Scatter plot residual scores depicted that assumption of homoscedasiticity was found to be assumed. There were found no outliers and there was a linear relationship. Results of hierarchical regression showed that confounding variables i.e., empowerment, success, interest, usefulness, caring and CGPA were entered in Step 1 while predictor i.e., self-regulated learning was entered in Step 2. The total variance explained by the model as a whole was 13%, F (7, 374) =8.026, p< .001 whereas the variance of model 1 was 8.7%, F Change (6, 374) =5.920, p< .001 while variance of model 2 was accounted for 4.4%, F Change (1, 373) = 18.96 p< .001. Empowerment, interest, caring, usefulness and CGPA were found to be non-significant predictor of academic procrastination whereas success and self-regulated learning were found to be significant negative predictors of academic procrastination.

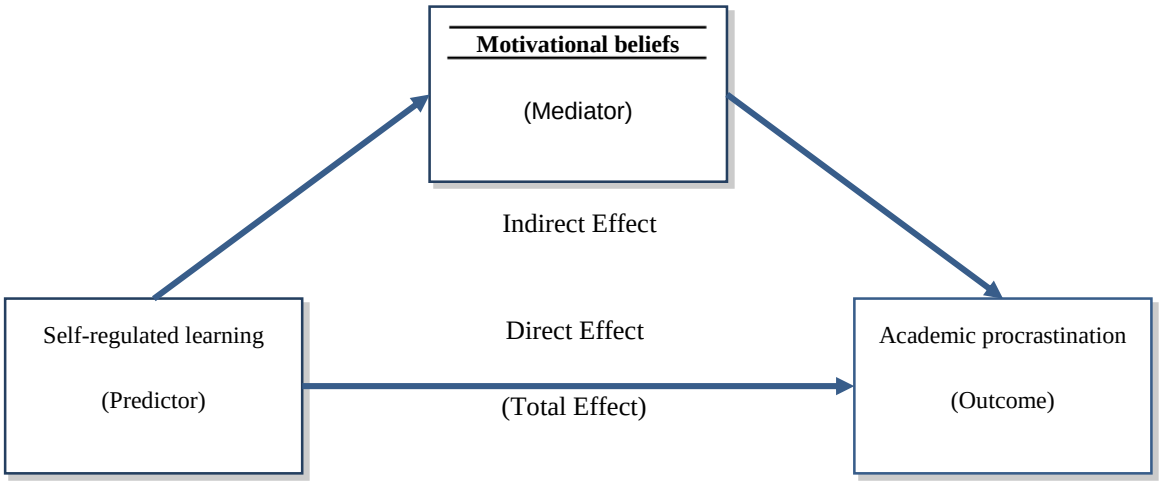

Figure 2: Motivational Believes

Table 5: Direct and Indirect Effects of Usefulness (sub-scale of motivational belief) on academic procrastination (N=381)

Effects	*B*	*95% CI*	
		LL	*UL*
Total	-.110***	-.143	-.007
Direct	-.093***	-.129	-.057
Indirect	-.017***	-.037	-.000

***p<.001*

Mediation analysis was carried out with PROCESS macro for SPSS (Hayes, 2018). Table 5 shows total, direct and indirect effects of usefulness on academic procrastination through self-regulated learning. The R^2value of .178 indicated that self-regulated learning explained 17% variance in usefulness with *F (1,379) = 82.35,p<.001*. TheR^2value of .113

indicated that self-regulated learning and usefulness explained 11% variance in academic procrastination with *F (2,378)= 24.26, p<.001.* The R^2value of .10 indicated that total model explained 10% variance with *F (1,379) = 43.49, p<.001.* The indirect and direct effects confirmed the partial mediating effect of usefulness between self-regulated learning and academic procrastination.

Table 6: Direct and Indirect Effects of Success (Sub-Scale of Motivational Belief)on Academic Procrastination *(N=381)*

Effects	*B*	*95% CI*	
		LL	*UL*
Total	-.110***	-.143	-.077
Direct	-.086***	-.122	-.051
Indirect	-.023***	-.043	-.007

***p<.001*

Table 6 shows total, direct and indirect effects of success on academic procrastination through self-regulated learning. The R^2value of .16 indicated that self-regulated learning explained 16% variance in success with *F (1,379) = 77.44, p<.001.* TheR^2value of .126 indicated that self-regulated learning and success explained 12% variance in academic procrastination with *F (2,378) = 27.30, p<.001.* The R^2value of .10 indicated that total model explain 10% variance with *F (1,379) =43.41, p<.001.* The indirect and direct effects confirmed the partial mediating effect of success between self-regulated learning and academic procrastination.

5. Discussions

The present study was aimed to find out the relationship between self-regulated learning, motivational beliefs and academic procrastination among adult e-learners. Furthermore, it was aimed to investigate the mediating relationship of motivational beliefs between self-regulated learning and academic procrastination among e-learners. Results supported our first hypothesis regarding a negative association of self-regulation and motivational beliefs with academic procrastination. It was found that both self-regulation and motivational beliefs were helpful in reducing academic procrastination among e-learners. Previous studies have supported our findings like Corkin (2012) reported a negative relationship between academic motivation and academic procrastination. Kandemir *et al*., (2014) also confirmed that low academic beliefs lead to academic procrastination. They reported that students with low level of beliefs about academic tasks were high on academic procrastination. Another study conducted by Rakes and Dunn (2010) mentioned that intrinsic motivation and self-regulation both are helpful in reducing academic procrastination. Researchers found that students who are more structured in their daily routine activities usually procrastinate less as compared to other students. Fact is, such students regulate and monitor their learning activities on a daily basis which ultimately helps in reducing academic procrastination (Manikandan & Sebin, 2013). Along with this, time management which is one of the basic components of motivational beliefs

that play a significant role in reducing academic procrastination among students (Almunandar *et al*., 2017). Our findings are also supported by ARCS model of motivation which stated that those students who found their academic activities as interesting, useful and relevant got good scores as compared to other students. Results supported our second hypothesis regarding predicting role of self-regulation and motivational beliefs in reducing academic procrastination among students. Previous theories have supported our findings such as Bandura (1997) identified that self-efficacy and self-regulation are important determinants in reducing academic procrastination. Lazarus and Folkman (1984) found that active planning can positively help in reduction of academic procrastination. Students who plan and organize their activities are less involved in academic procrastination. These cognitive based skills help students in overcoming procrastination (Tice & Baumeister, 1997). In align with our results of negative association between self-regulated learning and academic procrastination, Ferrari (1991) reported that both self-regulation and self-efficacy negatively predict the academic procrastination. Those students who found difficulty in completion of academic tasks procrastinate more and previous bad results may become the reason of procrastination. Due to this, their self-esteem decrease and they start procrastinating tasks. They become unable to monitor and regulate their academic activities due to the low feelings of self-esteem. Findings are supported by Bandura (1986) who suggested that when level of self-efficacy increases then individuals become determined in tasks completion. Due to this, their procrastinating behavior reduces. If students are determined to self-regulate their academic tasks then their procrastinating behaviors would reduce It has been observed that students with high self-efficacy are persistent in achieving the desired goals. Due to their continuous efforts, they develop academic proficiency (Bandura, 1997). Results supported our third hypothesis regarding the mediating role of motivation between self-regulated learning and academic procrastination. Linking with previous findings, it makes sense that self-efficacious and motivated students monitor and regulate their academic activities which ultimately lead towards reduction in academic procrastination (Hannok, 2011). Similarly, Pajares (2006) found students with similar abilities have different perceptions of how to self-regulate their learning. It is due to differences in self-efficacy beliefs. Students who have a strong belief regarding tasks completion complete their academic tasks without unnecessarily delays. In the current study, two important components of motivation which are usefulness and success mediated between self-regulated learning and academic procrastination. Previous literature supported results of the study who found that reward also play an important role for not delaying the task (Steel & König, 2006) They further discovered the fact that those tasks which find students help them in their future life are less likely to postpone. Due to this, self-motivation plays a mediating role in relationship between self-

regulated learning and academic procrastination.

6. Conclusion

The current study found negative relationship between self-regulated learning, motivational beliefs and academic procrastination. Therefore, it was concluded that effective self-regulated learning strategies help e-learners in reducing their academic procrastination. Moreover, motivational beliefs and its components also play a significant role in reduction of academic procrastination. It was also found that self-regulated learning and success (components of MUSIC inventory) emerged as significant negative predictor of academic procrastination. Furthermore, success and usefulness (components of MUSIC inventory) were found to mediate between self-regulated learning and academic procrastination. It was found that females scored high on interest component of MUSIC inventory as compared to male students

7. Limitations and Recommendations

The current study highlighted the importance of self-regulated learning and motivational beliefs in the prediction of academic procrastination. However, here may be few possible limitations of the study that should be interpreted with caution;

• Current study was cross-sectional study. In order to see the real effects of independent variables on academic procrastination, it was recommended to conduct experimental and longitudinal based studies.

• Current study was based on quantitative approach. For future studies, it was recommended to take interviews from students in order to know different procrastination behaviors.

• Current study was conducted on the students of Virtual University. For future studies, it was recommended to conduct in conventional settings as well. Researches can make a comparison between two different settings. In such a way, they may know about procrastination behaviors exhibited by students in different settings. Different approaches of self-regulation adopted by students and which motivational beliefs are more prominent in each setting in order to reduce academic procrastination.

• The total variance explained by the model was 13%. There are many other factors which predict academic procrastination. For future studies, it was recommended to explore different variables and their effects on academic procrastination.

• Current study included only students' perspective. It was recommended to take teachers and parents' perspectives for future time in order to know of how procrastinating behavior operates in adults.

Implications

• In the current study, academic procrastination has been well documented in e-learners. This study contributes to self-regulation, motivation and academic procrastination by exploring the significant motivational factors that may help in reducing academic procrastination.

• This study makes a significant contribution to university teachers of how to motivate students to self-regulate their academic activities. In such a manner, their academic procrastination would reduce.

• The study can be further implicated for educational and research purpose. Also the schools and universities can take advantage of the research to further find out different ways to help students in their academic issues.

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