

BUKTI KORESPONDENSI ARTIKEL JURNAL

Islamic Guidance and Counseling Journal
<https://journal.iaimnumetrolampung.ac.id/index.php/igcj>

Islamic Guidance and Counseling Journal, 5(2).
<https://doi.org/10.25217/igcj.v5i2.2700>

Tahun 2022

**The Role of Epistemological Belief and
Self Regulation in Academic Procrastination of Muslim College
Students**

M. Nur Ghufron

Kudus State Islamic Institute (IAIN Kudus), Indonesia
*e-mail: emnurghufron78@iainkudus.ac.id

Rini Risnawita Suminta

Kediri State Islamic Institute (IAIN Kediri), Indonesia

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of College Students

M. Nur Ghufon (IAIN Kudus)
Email: emnurghufon78@iainkudus.ac.id

Rini Risnawita Suminta (IAIN Kediri)
Email: rinirisnawita16@gmail.com

Abstract: The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of epistemological belief and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are three types of scales used in the data collection process: the scale of epistemological belief, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), belief about knowledge affects academic procrastination ($r = -0.157$, $p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199$, $p = 0.040$), belief about learning affects academic procrastination ($r = -0.147$, $p = 0.019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097$, $p = 0.030$).

Keywords: Belief about knowledge, belief about learning, self-regulation in learning and academic procrastination.

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Ellis & Knaus, 1977). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Haycock, McCarthy, & Skay, 1998), affective states including shame and guilt (Fee & Tangney, 2000), one's characteristics such as dependence (Johnson, Green, & Kluever, 2000), locus of control includes intrinsic and extrinsic motivation (Carden, Bryant, & Moss, 2004), role conflict (Senécal, Julien, & Guay, 2003), social activities (Jackson, Weiss, Lundquist, & Hooper, 2003), personality roles (Lee, Kelly, & Edwards, 2006), situational characteristics and traits (Stainton, Lay, & Flett, 2000) and self-regulation (Steel, 2007).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (van Eerde, 2003) It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Ellis & Knaus, 1977); 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis and Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Solomon and Rothblum, 1984), while Millgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Lum (1960) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Lum noted that although underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill

assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile, Solomon and Rothblum (1984) reported that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

According to Runes (1970), epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known. The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer & Pintrich, 1997).

According to Schommer-Aikins (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by,

students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research.(Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2002).

In the procrastination literature, Solomon and Rothblum (1984) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Elliott & Sheldon, 1997). Interpretively, this condition may be a natural result of underdeveloped epistemological belief.

The procrastination appears to be a chronic academic pattern (Ferrari, Johnson, & McCown, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2011), sleep quality (Przepiorka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh and Roy, 2017; Ziegler and Opdenakker, 2018; Li et al., 2019), and produces many bad effects such as negative emotions, anxiety and depression, poor

learning efficiency, lower academic self-esteem, and academic stress. Mengenai kepercayaan pada pengetahuan, Hill, Hill, Chabot, and Barrall (1978) suggested that academic procrastination may increase from one year to the next in college. Rothblum, Solomon, and Murakami (1986) stated that procrastination is detrimental to academic performance leading to lower grades and failure (Beswick, Rothblum, & Mann, 1988). Tice and Baumeister (1997) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief, self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (1986) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons, (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students

depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer & Heggestad, 1997). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time (Cascio, 1995).

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent.

Based on the explanation above, it should be emphasized that the purpose of this study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling which the steps to take the subject as a sample are carried out by, *first*, determining where students come from the Islamic Guidance and Counseling study program. *Second*, students who have taken thesis and *third* are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Table 1. Participant characteristics
(N=277)

Variable	Percentage (n)
<i>Gender:</i>	
Woman	61.7 (171)
Man	38.3 (106)
<i>Age:</i>	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
<i>Range of work for the current semester:</i>	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Research Instruments

The epistemological belief in this study is divided into two components of belief. First, belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes aspects; (1) authority/expert knowledge that it derives from people who know more / an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; *"I like the class where the teacher before teaching determines the unit of learning program"*, *"The answers in the reference book are very helpful because I am not sure of my own solutions"* and *"I feel comfortable when dealing with uncertain learning conditions"*.

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng, Johnson, & Anderson, Jehng (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *"If I can't understand something quickly, I usually have difficulty in learning it as a whole"* and *"Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students."*

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *"If I plan something, I'm pretty sure I can carry it out."* The metacognition dimension consists of 9 items, examples of which are; *"To produce a good work, I determine every step in the preparation"*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *"The biggest problem for me is hard to begin my ta"*.

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out

other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; “*In preparing the lecture task which has deadline, I often waste the time by doing others*” and “*I always say I will do it tomorrow*”.

The reliability calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the **Analysis of MOment Structures** (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 2 below:

Table 2. Description of research data

Variable	Descriptive Statistics				
	N	Minimal	Maximal	Mean	Std. Deviation
Belief about knowledge	277	0	12	7,98	2,475
Belief about learning	277	1	8	5,15	1,681
Self-regulation	277	0	12	6,74	2,627
Academic Procrastination	277	2	16	11,48	2,640

Based on table 2 above, it is known that the belief about knowledge variable has an empirical score of 7.98, with a standard deviation of 2.475, the belief about learning variable has an empirical score of 5.15, with a standard deviation of 1.681, the variable of self-regulation in learning has an empirical mean score of 6.74, with a standard deviation of 2.627, and the academic procrastination variable has an empirical mean score of 11.48 with a standard deviation of 2.640.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

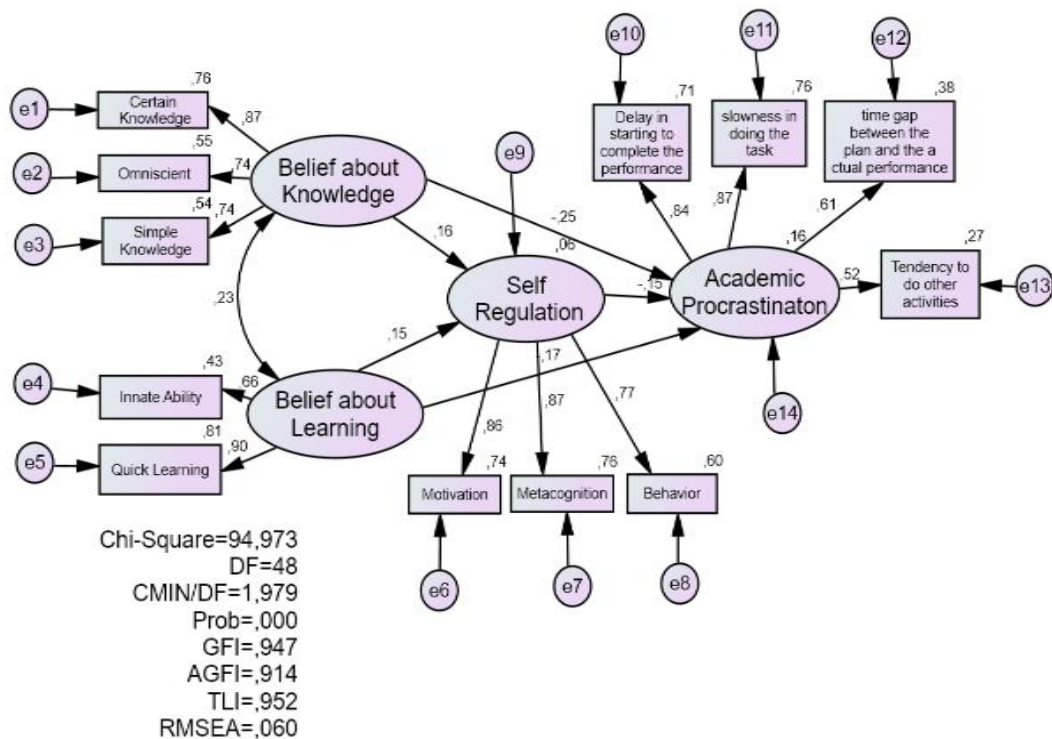


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, $p = 0.000$), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in Figure 1.

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 3.

Table 3: The Result of Causality Test Regression Weight

	Estimate	S.E.	C.R.	<i>P</i>
The variable of belief about knowledge on self-regulation in learning	0,157	0,071	2,203	0,028
The variable of belief about knowledge on academic procrastination	-0,157	0,047	-3,314	0,000
The variable of belief about learning on self-regulation in learning	0,199	0,097	2,053	0,040
The variable of belief about learning towards academic procrastination	-0,147	0,063	-2	0,019
The variables of self-regulation in learning towards academic procrastination	-0,097	0,045	-2	0,030

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has

a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097$, $p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Ferrari, Parker, & Ware, 1992; Sénécal, Lavoie, & Koestner, 1997; Solomon & Rothblum, 1984; Tulier, 2000). Fear of failure associated with self-efficacy (Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (Solomon & Rothblum, 1984; Ferrari, Keane, Wolfe, & Beck, 1998; Hess, Sherman, & Goodman, 2000; Senecal, Koestner, & Vallerand, 1995) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (*authority/expert knowledge*) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1998) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill, time, and effort problems of more or lack of independent learning (Howell, Watson, Powell, & Buro, 2006; Pychyl, Morin, & Salmon, 2000; Senecal, Julien, & Guay, 2003; Tuckman & Schouwenburg, 2004).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it

and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et.al., 1993; Schommer, 1990).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Klassen, Krawchuk, Lynch, & Rajani, 2008; Klassen, et.al, 2010).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

CONCLUSIONS

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

Nevertheless, this study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination. However, this study has several limitations such as the research theme is approached only with a quantitative approach model.

It is recommended to further deepen the findings in the field through experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

REFERENCES

- Balkıs, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relation with demographics and individual preferences [Akademik erteleme davranışının öğretmen adayları arasındaki yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi]. *Journal of Theory and Practice in Education / Eğitimde Kuram ve Uygulama*, 5(1), 18–32.

- Beswick, G., Rothblum, E.D., & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist*, 23, 207–217.
- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95, 581–582. doi:10.2466/pr0.95.2.581-582.
- Elliot, A. J., & Sheldon, K. M. (1997). Avoidance achievement motivation: A personal goals analysis. *Journal of Personality and Social Psychology*, 73, 171-185. <https://psycnet.apa.org/doi/10.1037/0022-3514.73.1.171>
- Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York: Institute for Rational Living.
- Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame or guilt? *Journal of Social Behavior & Personality*, 15(5), 167–184.
- Ferrari, J. R., Parker, J. T. & Ware, C.B. (1992). Academic Procrastination: Personality correlates with Meyer-Briggs Types Self Efficay and Academic Locus Of Control. *Journal Of Social Behavior and Personality*, 7.495-502.
- Ferrari, J. (2017, May 8). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian.
- Ferrari, J.R., Keane, S.M., Wolfe,R.N.,\$ Beck B.L(1998). The antecedents and consequences of academic excuse making: examining individual differences in procrastination. *Research in higher education*, 39.
- Ferrari,J.R.Johnson,J.L & McCown.W.G.(1995). *Procrastination and Task Avoidance, Theory, Research, and Treatment*. NewYork:Plenum Pers
- Ghosh, R., and Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students Is there any gender divide? *Gender Manag.* 32, 518–534. doi: 10.1108/gm-01-2017-0011
- Gueorguieva, J. M. (2011). Procrastination: A Measurement of Types. *Doctoral Thesis*, Western Illinois University, Markham.
- Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling & Development*, 76(3), 317–324. <https://doi.org/10.1002/j.1556-6676.1998.tb02548.x>

- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness predicts academic procrastination: The mediating role of neuroticism. *Journal of Social Behavior & Personality, 15*(5), 61-74.
- Hill, M. B., Hill, D. A., Chabot, A. A., & Barrall, F. (1978). A survey of college faculty and student procrastination. *College Student Journal, 12*(3), 256-262.
- Hill, M., Hill, D., Chabot, A., & Barral, J. (1978). A survey of college faculty and student procrastination. *College Students Personal Journal, 12*, 256-262.
- Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hofer, B.K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist, 39* (1), 1-3.
- Hofer, B.K. dan Pintrich, P.R. (1997) The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research, 67*, 88-140
- Howell, A. J., Watson, D. C., Powell, R. A., & Buro, K. (2006). Academic procrastination: the pattern and correlates of behavioural postponement. *Personality and Individual Differences, 40*, 1519–1530.
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of MidWestern collage students. *Education, 124*(2), 310–321.
- Jehng, J.C., Johnson, S.D. & Anderson, R.C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology, 18*, 23-25.
- Johnson, E.M., Green, K.E. and Kluever, R.C. (2000) . 'Psychometric characteristics of the revised procrastination inventory', *Research in Higher Education, 41*, pp. 269-271.
- Klassen, R.M. (2010). Academic Procrastination in Two Settings: Motivation Correlates, Behavioral Patterns, and Negative Impact of Procrastination in Canada and

- Singapore. *Journal of Applied Psychology* (3), 361–379 doi: 10.1111/j.1464-0597.2009.00394.x
- Klingsieck, K. B. (2013). Procrastination: when good things don't come to those who wait. *Eur. Psychol.* 18, 24–34. doi: 10.1027/1016-9040/a000138
- Lee, D. G., Kelly, K. R. & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27–37.
- Li, H. X., Zhang, J. J., Zhao, X., Si, J. W., and Huang, B. J. (2019). Relationship between epistemological beliefs, self-regulated learning and academic procrastination in college students: a moderated mediation model. *Psychol. Dev. Educ.* 35, 557–565.
- Lum, M. K. M. (1960). A comparison of under- and overachieving female college students. *Journal of Educational Psychology*, 51, 109-115.
- Milgram, N. 1991. *Procrastination. Encyclopedia of Human Biology*. New York: Academic Press.
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19.
- Onwuegbuzie, J. A., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries*, 61(1), 45-54.
- Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning. In Handbook of self-regulation* (pp. 451-502). Academic Press.
- Przepiorka, A., Blachnio, A., and Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiol. Int.* 36, 1025–1035. doi: 10.1080/07420528.2019.1607370
- Pychyl, T. A., Morin, R. W., & Salmon, B. W. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality*, 16, 135–151.
<http://search.proquest.com/openview/fd4a18b2e292fb8b354319ee12e658b1/1?q-origsite=gscholar&cbl=18>

- Ren, Z. (2006). A Cross Cultural Study of Epistemological Belief and Moral Reasoning Between American and China College Student. *Unpublished doctoral dissertation*. University of Old Dominion
- Rothblum, E.D., Solomon, L., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology, 33*, 387–394.
- Runes, D. D. (1971). *Dictionary of Philosophy*. Totawa, New Jersey: Adam S. & Co.
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology, 82*, 498-504.
- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology, 33*, 135-145.
- Senecal, C., Koestner, R., and Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counseling Psychology, 31*, 503-509.
- Stainton, M., Lay, C. H., & Flett, G. L. (2000). Procrastination: Current issues and new directions. (J. Ferrari, & T. Pychyl, Eds.) *Journal of Social Behavior and Personality, 15*(5), 297–312.
- Stead, R., Shanahan, M. J., and Neufeld, R. W. J. (2010). "I'll go to therapy, eventually": procrastination, stress and mental health. *Pers. Individ. Diff. 49*, 175–180. doi: 10.1016/j.paid.2010.03.028
- Steel, P. (2007). The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin, 133*, 65-94. <http://dx.doi.org/10.1037/0033-2909.133.1.65>
- Tice, D. M. & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychology Science, 8*,454-458.
- Tuckman, B., & Schouwenburg, H. C. (2004). Behavioral Interventions for Reducing Procrastination among University Students. In H. C. Schouwenburg, C. H. Lay, T. A. Pychyl, & J. R. Ferrari (Eds.), *Counselling the Procrastinator in Academic*

Settings (pp. 91-103). Washington DC: American Psychological Association.
<http://dx.doi.org/10.1037/10808-007>

Tullier, M. (2000). *The complete idiot's guide to overcoming procrastination*. Indianapolis, IN: Alpha Books.

van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35, 1401-1418.
<https://doi.org/10.1016/S0191-88690200358-6>

Zhang, C. H., Si, J. W., and Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol.* 26, 106–109.

Ziegler, N., and Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: the link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learn. Individ. Diff.* 64, 71–82. doi: 10.1016/j.lindif.2018.04.009

M._Nur_Ghufron_dan_Risna_IG CJ_2022.docx

by

Submission date: 04-Nov-2022 06:34AM (UTC+0700)

Submission ID: 1943885405

File name: M._Nur_Ghufron_dan_Risna_IGCJ_2022.docx (193.92K)

Word count: 6030

Character count: 35525

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of College Students

M. Nur Ghufon (IAIN Kudus)
Email: emnurghufon78@iainkudus.ac.id

Rini Risnawita Suminta (IAIN Kediri)
Email: rinirisnawita16@gmail.com

Abstract: The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of epistemological belief and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are three types of scales used in the data collection process: the scale of epistemological belief, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), belief about knowledge affects academic procrastination ($r = -0.157$, $p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199$, $p = 0.040$), belief about learning affects academic procrastination ($r = -0.147$, $p = 0.019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097$, $p = 0.030$).

Keywords: Belief about knowledge, belief about learning, self-regulation in learning and academic procrastination.

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Ellis & Knaus, 1977). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Haycock, McCarthy, & Skay, 1998), affective states including shame and guilt (Fee & Tangney, 2000), one's characteristics such as dependence (Johnson, Green, & Kluever, 2000), locus of control includes intrinsic and extrinsic motivation (Carden, Bryant, & Moss, 2004), role conflict (Senécal, Julien, & Guay, 2003), social activities (Jackson, Weiss, Lundquist, & Hooper, 2003), personality roles (Lee, Kelly, & Edwards, 2006), situational characteristics and traits (Stainton, Lay, & Flett, 2000) and self-regulation (Steel, 2007).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (van Eerde, 2003) It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Ellis & Knaus, 1977); 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis and Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Solomon and Rothblum, 1984), while Millgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Lum (1960) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Lum noted that although underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill

assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile, Solomon and Rothblum (1984) reported that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

According to Runes (1970), epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known. The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer & Pintrich, 1997).

According to Schommer-Aikins (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by,

students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research.(Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2002).

In the procrastination literature, Solomon and Rothblum (1984) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Elliott & Sheldon, 1997). Interpretively, this condition may be a natural result of underdeveloped epistemological belief.

The procrastination appears to be a chronic academic pattern (Ferrari, Johnson, & McCown, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2011), sleep quality (Przepiorka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh and Roy, 2017; Ziegler and Opdenakker, 2018; Li et al., 2019), and produces many bad effects such as negative emotions, anxiety and depression, poor

learning efficiency, lower academic self-esteem, and academic stress. Mengenai kepercayaan pada pengetahuan, Hill, Hill, Chabot, and Barrall (1978) suggested that academic procrastination may increase from one year to the next in college. Rothblum, Solomon, and Murakami (1986) stated that procrastination is detrimental to academic performance leading to lower grades and failure (Beswick, Rothblum, & Mann, 1988). Tice and Baumeister (1997) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief, self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (1986) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons, (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students

depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer & Heggstad, 1997). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time (Cascio, 1995).

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent.

Based on the explanation above, it should be emphasized that the purpose of this study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling which the steps to take the subject as a sample are carried out by, *first*, determining where students come from the Islamic Guidance and Counseling study program. *Second*, students who have taken thesis and *third* are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Table 1. Participant characteristics (N=277)

Variable	Percentage (n)
<i>Gender:</i>	
Woman	61.7 (171)
Man	38.3 (106)
<i>Age:</i>	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
<i>Range of work for the current semester:</i>	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Research Instruments

The epistemological belief in this study is divided into two components of belief. First, belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes aspects; (1) authority/expert knowledge that it derives from people who know more / an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; *"I like the class where the teacher before teaching determines the unit of learning program"*, *"The answers in the reference book are very helpful because I am not sure of my own solutions"* and *"I feel comfortable when dealing with uncertain learning conditions"*.

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng, Johnson, & Anderson, Jehng (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *"If I can't understand something quickly, I usually have difficulty in learning it as a whole"* and *"Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students."*

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *"If I plan something, I'm pretty sure I can carry it out."* The metacognition dimension consists of 9 items, examples of which are; *"To produce a good work, I determine every step in the preparation"*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *"The biggest problem for me is hard to begin my ta"*.

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out

other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; “*In preparing the lecture task which has deadline, I often waste the time by doing others*” and “*I always say I will do it tomorrow*”.

The reliability calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the Analysis of **MO**ment Structures (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 2 below:

Table 2. Description of research data

Variable	Descriptive Statistics				
	N	Minimal	Maximal	Mean	Std. Deviation
Belief about knowledge	277	0	12	7,98	2,475
Belief about learning	277	1	8	5,15	1,681
Self-regulation	277	0	12	6,74	2,627
Academic Procrastination	277	2	16	11,48	2,640

Based on table 2 above, it is known that the belief about knowledge variable has an empirical score of 7.98, with a standard deviation of 2.475, the belief about learning variable has an empirical score of 5.15, with a standard deviation of 1.681, the variable of self-regulation in learning has an empirical mean score of 6.74, with a standard deviation of 2.627, and the academic procrastination variable has an empirical mean score of 11.48 with a standard deviation of 2.640.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

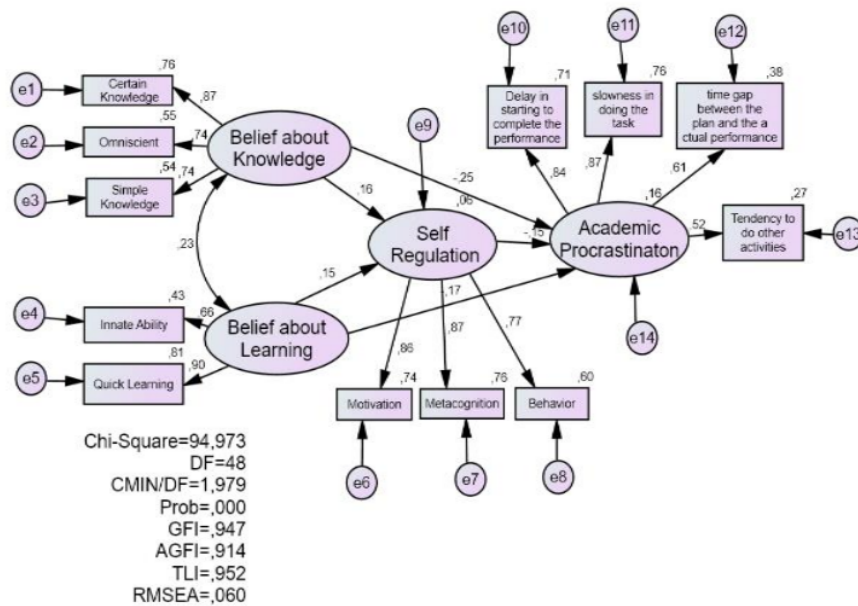


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, $p = 0.000$), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in Figure 1.

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 3.

Table 3: The Result of Causality Test Regression Weight

	Estimate	S.E.	C.R.	P
The variable of belief about knowledge on self-regulation in learning	0,157	0,071	2,203	0,028
The variable of belief about knowledge on academic procrastination	-0,157	0,047	-3,314	0,000
The variable of belief about learning on self-regulation in learning	0,199	0,097	2,053	0,040
The variable of belief about learning towards academic procrastination	-0,147	0,063	-2	0,019
The variables of self-regulation in learning towards academic procrastination	-0,097	0,045	-2	0,030

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has

a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097$, $p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Ferrari, Parker, & Ware, 1992; Sénécal, Lavoie, & Koestner, 1997; Solomon & Rothblum, 1984; Tulier, 2000). Fear of failure associated with self-efficacy (Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (Solomon & Rothblum, 1984; Ferrari, Keane, Wolfe, & Beck, 1998; Hess, Sherman, & Goodman, 2000; Senecal, Koestner, & Vallerand, 1995) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (*authority/expert knowledge*) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1998) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill, time, and effort problems of more or lack of independent learning (Howell, Watson, Powell, & Buro, 2006; Pychyl, Morin, & Salmon, 2000; Senecal, Julien, & Guay, 2003; Tuckman & Schouwenburg, 2004).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it

and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et.al., 1993; Schommer, 1990).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Klassen, Krawchuk, Lynch, & Rajani, 2008; Klassen, et.al, 2010).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

CONCLUSIONS

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks are not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

Nevertheless, this study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination. However, this study has several limitations such as the research theme is approached only with a quantitative approach model.

It is recommended to further deepen the findings in the field through experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integrately. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

REFERENCES

- Balkıs, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relation with demographics and individual preferences [Akademik erteleme davranışının öğretmen adayları arasındaki yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi]. *Journal of Theory and Practice in Education / Eğitimde Kuram ve Uygulama*, 5(1), 18–32.

- ³⁰ Beswick, G., Rothblum, E.D., & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist*, 23, 207–217.
- ¹³ Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95, 581–582. doi:10.2466/pr0.95.2.581-582.
- ⁸ Elliot, A. J., & Sheldon, K. M. (1997). Avoidance achievement motivation: A personal goals analysis. *Journal of Personality and Social Psychology*, 73, 171-185. <https://psycnet.apa.org/doi/10.1037/0022-3514.73.1.171>
- ³ Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York: Institute for Rational Living.
- ¹ Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame or guilt? *Journal of Social Behavior & Personality*, 15(5), 167–184.
- Ferrari, J. R., Parker, J. T. & Ware, C.B. (1992). Academic Procrastination: Personality correlates with Meyer-Briggs Types Self Efficacy and Academic Locus Of Control. *Journal Of Social Behavior and Personality*, 7.495-502.
- Ferrari, J. (2017, May 8). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian.
- ¹⁶ Ferrari, J.R., Keane, S.M., Wolfe,R.N.,\$ Beck B.L(1998). The antecedents and consequences of academic excuse making: examining individual differences in procrastination. *Research in higher education*, 39.
- ¹⁴ Ferrari,J.R.Johnson,J.L & McCown.W.G.(1995). *Procrastination and Task Avoidance, Theory, Research, and Treatment*. New York:Plenum Pers
- ²¹ Ghosh, R., and Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students Is there any gender divide? *Gender Manag.* 32, 518–534. doi: 10.1108/gm-01-2017-0011
- Gueorguieva, J. M. (2011). Procrastination: A Measurement of Types. *Doctoral Thesis*, Western Illinois University, Markham.
- Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling & Development*, 76(3), 317–324. <https://doi.org/10.1002/j.1556-6676.1998.tb02548.x>
- ³⁹

- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness predicts academic procrastination: The mediating role of neuroticism. *Journal of Social Behavior & Personality, 15*(5), 61-74.
- Hill, M. B., Hill, D. A., Chabot, A. A., & Barrall, F. (1978). A survey of college faculty and student procrastination. *College Student Journal, 12*(3), 256-262.
- Hill, M., Hill, D., Chabot, A., & Barral, J. (1978). A survey of college faculty and student procrastination. *College Students Personal Journal, 12*, 256-262.
- Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hofer, B.K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist, 39* (1), 1-3.
- Hofer, B.K. dan Pintrich, P.R. (1997) The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research, 67*, 88-140
- Howell, A. J., Watson, D. C., Powell, R. A., & Buro, K. (2006). Academic procrastination: the pattern and correlates of behavioural postponement. *Personality and Individual Differences, 40*, 1519–1530.
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of MidWestern collage students. *Education, 124*(2), 310–321.
- Jehng, J.C., Johnson, S.D. & Anderson, R.C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology, 18*, 23-25.
- Johnson, E.M., Green, K.E. and Kluever, R.C. (2000) . 'Psychometric characteristics of the revised procrastination inventory', *Research in Higher Education, 41*, pp. 269-271.
- Klassen, R.M. (2010). Academic Procrastination in Two Settings: Motivation Correlates, Behavioral Patterns, and Negative Impact of Procrastination in Canada and

Singapore. *Journal of Applied Psychology* (3), 361–379 doi: 10.1111/j.1464-0597.2009.00394.x

- 11 Klingsieck, K. B. (2013). Procrastination: when good things don't come to those who wait. *Eur. Psychol.* 18, 24–34. doi: 10.1027/1016-9040/a000138
- 24 Lee, D. G., Kelly, K. R. & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27–37.
- 38 Li, H. X., Zhang, J. J., Zhao, X., Si, J. W., and Huang, B. J. (2019). Relationship between epistemological beliefs, self-regulated learning and academic procrastination in college students: a moderated mediation model. *Psychol. Dev. Educ.* 35, 557–565.
- 27 Lum, M. K. M. (1960). A comparison of under- and overachieving female college students. *Journal of Educational Psychology*, 51, 109-115.
- 34 Milgram, N. 1991. *Procrastination. Encyclopedia of Human Biology*. New York: Academic Press.
- 26 Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19.
- 48 Onwuegbuzie, J. A., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries*, 61(1), 45-54.
- 20 Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning. In Handbook of self-regulation* (pp. 451-502). Academic Press.
- 10 Przepiorcka, A., Blachnio, A., and Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiol. Int.* 36, 1025–1035. doi: 10.1080/07420528.2019.1607370
- 17 Pychyl, T. A., Morin, R. W., & Salmon, B. W. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality*, 16, 135–151. <http://search.proquest.com/openview/fd4a18b2e292fb8b354319ee12e658b1/1?q-origsite=gscholar&cbl=18>

- 4
Ren, Z. (2006). A Cross Cultural Study of Epistemological Belief and Moral Reasoning Between American and China College Student. *Unpublished doctoral dissertation*. University of Old Dominion
- 3
Rothblum, E.D., Solomon, L., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology, 33*, 387–394.
- 9
Runnes, D. D. (1971). *Dictionary of Philosophy*. Totowa, New Jersey: Adam S. & Co.
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology, 82*, 498-504.
- 19
Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology, 33*, 135-145.
- 28
Senecal, C., Koestner, R., and Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619
- 25
Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counseling Psychology, 31*, 503-509.
- 10
Stainton, M., Lay, C. H., & Flett, G. L. (2000). Procrastination: Current issues and new directions. (J. Ferrari, & T. Pychyl, Eds.) *Journal of Social Behavior and Personality, 15*(5), 297–312.
- Stead, R., Shanahan, M. J., and Neufeld, R. W. J. (2010). "I'll go to therapy, eventually": procrastination, stress and mental health. *Pers. Individ. Diff. 49*, 175–180. doi: 10.1016/j.paid.2010.03.028
- 2
Steel, P. (2007). The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin, 133*, 65-94. <http://dx.doi.org/10.1037/0033-2909.133.1.65>
- Tice, D. M. & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychology Science, 8*, 454-458.
- 23
Tuckman, B., & Schouwenburg, H. C. (2004). Behavioral Interventions for Reducing Procrastination among University Students. In H. C. Schouwenburg, C. H. Lay, T. A. Pychyl, & J. R. Ferrari (Eds.), *Counselling the Procrastinator in Academic*

Settings (pp. 91-103). Washington DC: American Psychological Association.

<http://dx.doi.org/10.1037/10808-007>

11

Tullier, M. (2000). *The complete idiot's guide to overcoming procrastination*. Indianapolis, IN: Alpha Books.

29

van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35, 1401-1418.

<https://doi.org/10.1016/S0191-88690200358-6>

Zhang, C. H., Si, J. W., and Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol.* 26, 106–109.

7

Ziegler, N., and Opendakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: the link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learn. Individ. Diff.* 64, 71–82. doi:

10.1016/j.lindif.2018.04.009

ORIGINALITY REPORT

18%

SIMILARITY INDEX

18%

INTERNET SOURCES

%

PUBLICATIONS

%

STUDENT PAPERS

PRIMARY SOURCES

1	journalhosting.ucalgary.ca Internet Source	1%
2	publications.aston.ac.uk Internet Source	1%
3	journalppw.com Internet Source	1%
4	jurnal.ugm.ac.id Internet Source	1%
5	nittaidai.repo.nii.ac.jp Internet Source	1%
6	srhe.tandfonline.com Internet Source	1%
7	jsp.uma.ac.ir Internet Source	1%
8	jeseh.net Internet Source	1%
9	www.rossflynn.com Internet Source	1%

10	akjournals.com Internet Source	1 %
11	www.assumptionjournal.au.edu Internet Source	1 %
12	journal.tarbiyahainib.ac.id Internet Source	1 %
13	m.scirp.org Internet Source	1 %
14	www.e-journal.my.id Internet Source	1 %
15	www.lifesciencesite.com Internet Source	1 %
16	journal2.um.ac.id Internet Source	<1 %
17	www.geauniversitas.cl Internet Source	<1 %
18	lawrenceblum.com Internet Source	<1 %
19	www.journal.ubaya.ac.id Internet Source	<1 %
20	www.abacademies.org Internet Source	<1 %
21	www.emerald.com Internet Source	<1 %

22	www.growingscience.com Internet Source	<1 %
23	www.scielo.org.mx Internet Source	<1 %
24	en.wikipedia.org Internet Source	<1 %
25	etd.uum.edu.my Internet Source	<1 %
26	hdl.handle.net Internet Source	<1 %
27	wiredspace.wits.ac.za Internet Source	<1 %
28	kar.kent.ac.uk Internet Source	<1 %
29	spaj.ukm.my Internet Source	<1 %
30	www.ux1.eiu.edu Internet Source	<1 %
31	users.ugent.be Internet Source	<1 %
32	research.bangor.ac.uk Internet Source	<1 %
33	ojs.fkip.ummetro.ac.id Internet Source	<1 %

34	jurnal.untad.ac.id Internet Source	<1 %
35	epiphany.ius.edu.ba Internet Source	<1 %
36	scholar.afit.edu Internet Source	<1 %
37	ajhssr.com Internet Source	<1 %
38	journals.iau.ir Internet Source	<1 %
39	www.mlsjournals.com Internet Source	<1 %
40	www.mysciencework.com Internet Source	<1 %
41	ejournal.iai-tribakti.ac.id Internet Source	<1 %
42	ijsmr.in Internet Source	<1 %
43	jurnal.iain-padangsidimpuan.ac.id Internet Source	<1 %
44	research.rug.nl Internet Source	<1 %
45	scholar.lib.vt.edu Internet Source	<1 %

46

www.scipie.net

Internet Source

<1 %

47

journal.utm.edu.my

Internet Source

<1 %

48

www.asianonlinejournals.com

Internet Source

<1 %

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off

[IGCJ] Submission Acknowledgement

Kotak Masuk x



Aprezo Pardodi Maba <editorial@igcjournal.co... 18 Jun 2022 23.09
kepada saya

Inggris

Indonesia

Terjemahkan pesan Nonaktif

Dear Dr. M. Nur Ghufron:

Thank you for submitting the manuscript, "The Role of Epistemologic Regulation in Academic Procrastination of College Students" to Subi the online journal management system that we are using, you will be progress through the editorial process by logging in to the journal we

Submission URL: <https://igcjournal.com/index.php/submissionportal/authorDashboard/submission/4>

Username: **ghufron**

If you have any questions, please contact me. Thank you for consider a venue for your work.

Warm regards,
Aprezo Pardodi Maba

Editorial Team of [Islamic Guidance and Counseling Journal](#)
Listed in [Scopus](#) and [Scimago JR \(Q2 - 0.170\)](#)
Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Rep

Notifications**[IGCJ] Editor Decision**

2022-08-27 11:14 AM

Dear Dr. M. Nur Ghufron:

We have reached a decision regarding your submission to Islamic Guidance and Counseling Journal (Submission Portal - New!), "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students".

Our decision is **Revisions Required**.

I have attached the comments on your manuscript with the reviewers' suggestions and, where specified, also the editorial office's requests.

The original reviewers will re-evaluate the revised version of your manuscript. Resubmission of the revised manuscript, however, does not guarantee its acceptance for publication in the Islamic Guidance and Counseling Journal (Submission Portal - New!).

You will have **Four Weeks** to submit your revised version.

I look forward to receiving these corrections so as to ensure a speedy review process.

Kind regards,

Aprezo Pardodi Maba
Institut Agama Islam Ma'arif NU (IAIMNU) Metro
Lampung
aprezopm@gmail.com

Reviewer C:

ABSTRACT

Abstract has not been written consistently. The objectives and methods of data collection contain 3 variables, but the results contain 4 variables

RESEARCH INSTRUMENTS

Notifications**[IGCJ] Editor Decision**

2022-08-27 11:14 AM

Dear Dr. M. Nur Ghufron:

We have reached a decision regarding your submission to Islamic Guidance and Counseling Journal (Submission Portal - New!), "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students".

Our decision is **Revisions Required**.

I have attached the comments on your manuscript with the reviewers' suggestions and, where specified, also the editorial office's requests.

The original reviewers will re-evaluate the revised version of your manuscript. Resubmission of the revised manuscript, however, does not guarantee its acceptance for publication in the Islamic Guidance and Counseling Journal (Submission Portal - New!).

You will have **Four Weeks** to submit your revised version.

I look forward to receiving these corrections so as to ensure a speedy review process.

Kind regards,

Aprezo Pardodi Maba
Institut Agama Islam Ma'arif NU (IAIMNU) Metro
Lampung
aprezopm@gmail.com

Reviewer C:

ABSTRACT

Abstract has not been written consistently. The objectives and methods of data collection contain 3 variables, but the results contain 4 variables

RESEARCH INSTRUMENTS

Reviewer C:

ABSTRACT

Abstract has not been written consistently. The objectives and methods of data collection contain 3 variables, but the results contain 4 variables

RESEARCH INSTRUMENTS

1. There are 4 research variables, but only 3 scales are used. Please check again
2. Explain what scale is used, whether Likert, Thurstone and so on
3. Describe the method of proving the validity used. Referring to the results of the study, this study uses construct validity with the CFA technique
4. Write down the reliability estimation technique used, whether construct reliability or Alpha technique from Cronbach or others

RESULTS AND DISCUSSION

1. Check again the descriptive statistics written. What is written here the measurement result score? If yes, then it needs to be reviewed, there is a data error.
2. To get a more convincing description, the results of the CFA tests that have been carried out should be written down (use the table).

REFERENCES

Authors should spend more time adding or replacing outdated references

Recommendation: Revisions Required

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

Abstract: The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of epistemological belief and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are three types of scales used in the data collection process: the scale of epistemological belief, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157, p = 0.028$), belief about knowledge affects academic procrastination ($r = -0.157, p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199, p = 0.040$), belief about learning affects academic procrastination ($r = -0.147, p = 0.019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097, p = 0.030$).

Keywords: Belief about knowledge, belief about learning, self-regulation in learning and academic procrastination.

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Ellis & Knaus, 1977). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Haycock, McCarthy, & Skay, 1998), affective states including shame and guilt (Fee & Tangney, 2000), one's characteristics such as dependence (Johnson, Green, & Kluever, 2000), locus of control includes intrinsic and extrinsic motivation (Carden, Bryant, & Moss, 2004), role conflict (Senécal, Julien, & Guay, 2003), social activities (Jackson, Weiss, Lundquist, & Hooper, 2003), personality roles (Lee, Kelly, & Edwards, 2006), situational characteristics and traits (Stainton, Lay, & Flett, 2000) and self-regulation (Steel, 2007).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often

Commented [WW1]: Abstract has not been written consistently. The objectives and methods of data collection contain 3 variables, but the results contain 4 variables

considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (van Eerde, 2003) It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Ellis & Knaus, 1977); 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis and Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Solomon and Rothblum, 1984), while Millgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Lum (1960) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Lum noted that although underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile, Solomon and Rothblum (1984) reported that the procrastination factor due to

the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

According to Runes (1970), epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known. The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer & Pintrich, 1997).

According to Schommer-Aikins (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry

hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research.(Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2002).

In the procrastination literature, Solomon and Rothblum (1984) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Elliott & Sheldon, 1997). Interpretively, this condition may be a natural result of underdeveloped epistemological belief.

The procrastination appears to be a chronic academic pattern (Ferrari, Johnson, & McCown, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2011), sleep quality (Przepiorka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh and Roy, 2017; Ziegler and Opendakker, 2018; Li et al., 2019), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency. lower academic self-esteem, and academic stress. Mengenai kepercayaan pada pengetahuan, Hill, Hill, Chabot, and Barrall (1978) suggested that

academic procrastination may increase from one year to the next in college. Rothblum, Solomon, and Murakami (1986) stated that procrastination is detrimental to academic performance leading to lower grades and failure (Beswick, Rothblum, & Mann, 1988). Tice and Baumeister (1997) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief, self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (1986) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons, (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a

deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer & Heggstad, 1997). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time (Cascio, 1995).

Rationale of the Current Study

Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent academic procrastination, it will certainly be a problem for them, and can also be considered as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief,

sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent. Thus the hypothesis can be put forward:

Hypothesis

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling which the steps to take the subject as a sample are carried out by, *first*, determining where students come from the Islamic Guidance and Counseling study program. *Second*, students who have taken thesis and *third* are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Table 1. Participant characteristics
(N=277)

Commented [WW2]: Could the rationality of sampling with this method be explained?

Variable	Percentage (n)
<i>Gender:</i>	
Woman	61.7 (171)
Man	38.3 (106)
<i>Age:</i>	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
<i>Range of work for the current semester:</i>	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Research Instruments

Three different scales were used in the data collection process. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The epistemological belief in this study is divided into two components of belief. First, belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes aspects; (1) authority/expert knowledge that it derives from people who know more / an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; "I like the class where the teacher before teaching determines the unit of learning program", "The answers in the reference book are very helpful because I am not sure of my own solutions" and "I feel comfortable when dealing with uncertain learning conditions".

Commented [WW3]: On the research instrument,
1. There are 4 research variables, but only 3 scales are used. Please check again
2. Explain what scale is used, whether Likert, Thurstone and so on

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng, Johnson, & Anderson, Jehng (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; "*If I can't understand something quickly, I usually have difficulty in learning it as a whole*" and "*Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students.*".

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; "*If I plan something, I'm pretty sure I can carry it out.*" The metacognition dimension consists of 9 items, examples of which are; "*To produce a good work, I determine every step in the preparation*". Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; "*The biggest problem for me is hard to begin my ta*".

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; "*In preparing the lecture task which has deadline, I often waste the time by doing others*" and "*I always say I will do it tomorrow*".

The reliability calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic

procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the Analysis of **MO**ment Structures (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 2 below:

Table 2. Description of research data

Variable	Descriptive Statistics				
	N	Minimal	Maximal	Mean	Std. Deviation
Belief about knowledge	277	0	12	7,98	2,475
Belief about learning	277	1	8	5,15	1,681
Self-regulation	277	0	12	6,74	2,627
Academic Procrastination	277	2	16	11,48	2,640

Based on table 2 above, it is known that the belief about knowledge variable has an empirical score of 7.98, with a standard deviation of 2.475, the belief about learning variable has an empirical score of 5.15, with a standard deviation of 1.681, the variable of self-regulation in learning has an empirical mean score of 6.74, with a standard deviation of 2.627, and the academic procrastination variable has an empirical mean score of 11.48 with a standard deviation of 2.640.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

Commented [WW4]: (1) Describe the method of proving the validity used. Referring to the results of the study, this study uses construct validity with the first order CFA technique

(2) Write down the reliability estimation technique used, whether construct reliability or Alpha technique from Cronbach or others

Commented [WW5]: Check again the descriptive statistics written. What is written here the measurement result score? If yes, then it needs to be reviewed, there is a data error

Commented [WW6]: To get a more convincing description, the results of the CFA tests that have been carried out should be written down (use the table)

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

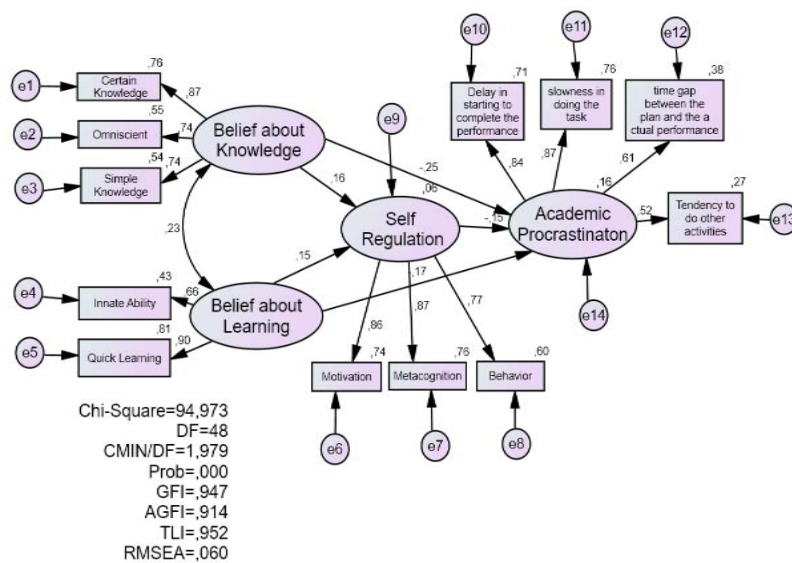


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, p = 0.000), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in Figure 1.

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 3.

Table 3: The Result of Causality Test Regression Weight

	Estimate	S.E.	C.R.	<i>P</i>
The variable of belief about knowledge on self-regulation in learning	0,157	0,071	2,203	0,028
The variable of belief about knowledge on academic procrastination	-0,157	0,047	-3,314	0,000
The variable of belief about learning on self-regulation in learning	0,199	0,097	2,053	0,040
The variable of belief about learning towards academic procrastination	-0,147	0,063	-2	0,019
The variables of self-regulation in learning towards academic procrastination	-0,097	0,045	-2	0,030

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097$, $p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Ferrari, Parker, & Ware, 1992; Senécal, Lavoie, & Koestner, 1997; Solomon & Rothblum, 1984; Tulier, 2000). Fear of failure associated with self-efficacy (Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (Solomon & Rothblum, 1984; Ferrari, Keane, Wolfe, & Beck, 1998; Hess, Sherman, & Goodman, 2000; Senecal, Koestner, & Vallerand, 1995) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (*authority/expert knowledge*) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be

explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1998) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill, time, and effort problems of more or lack of independent learning (Howell, Watson, Powell, & Buro, 2006; Pychyl, Morin, & Salmon, 2000; Senecal, Julien, & Guay, 2003; Tuckman & Schouwenburg, 2004).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which

believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et.al., 1993; Schommer, 1990).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Klassen, Krawchuk, Lynch, & Rajani, 2008; Klassen, et.al, 2010).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering

the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

REFERENCES

Balkıs, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relation with demographics and individual preferences [Akademik erteleme davranışının öğretmen adayları arasındaki

Commented [WW7]: Authors should spend more time adding or replacing outdated references

- yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi]. *Journal of Theory and Practice in Education / Eğitimde Kuram ve Uygulama*, 5(1), 18–32.
- Beswick, G., Rothblum, E.D., & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist*, 23, 207–217.
- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95, 581–582. doi:10.2466/pr0.95.2.581-582.
- Elliot, A. J., & Sheldon, K. M. (1997). Avoidance achievement motivation: A personal goals analysis. *Journal of Personality and Social Psychology*, 73, 171–185. <https://psycnet.apa.org/doi/10.1037/0022-3514.73.1.171>
- Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York: Institute for Rational Living.
- Fee, R. L., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame or guilt? *Journal of Social Behavior & Personality*, 15(5), 167–184.
- Ferrari, J. R., Parker, J. T. & Ware, C.B. (1992). Academic Procrastination: Personality correlates with Meyer-Briggs Types Self Efficacy and Academic Locus Of Control. *Journal Of Social Behavior and Personality*, 7,495-502.
- Ferrari, J. (2017, May 8). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian.
- Ferrari, J.R., Keane, S.M., Wolfe,R.N.,\$ Beck B.L(1998). The antecedents and consequences of academic excuse making: examining individual differences in procrastination. *Research in higher education*, 39.
- Ferrari,J.R.Johnson,J.L & McCown.W.G.(1995). *Procrastination and Task Avoidance, Theory, Research, and Treatment*. NewYork:Plenum Pers
- Ghosh, R., and Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students Is there any gender divide? *Gender Manag.* 32, 518–534. doi: 10.1108/gm-01-2017-0011
- Gueorguieva, J. M. (2011). Procrastination: A Measurement of Types. *Doctoral Thesis*, Western Illinois University, Markham.

- Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling & Development*, 76(3), 317–324. <https://doi.org/10.1002/j.1556-6676.1998.tb02548.x>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness predicts academic procrastination: The mediating role of neuroticism. *Journal of Social Behavior & Personality*, 15(5), 61-74.
- Hill, M. B., Hill, D. A., Chabot, A. A., & Barrall, F. (1978). A survey of college faculty and student procrastination. *College Student Journal*, 12(3), 256-262.
- Hill, M., Hill, D., Chabot, A., & Barral, J. (1978). A survey of college faculty and student procrastination. *College Students Personal Journal*, 12, 256-262.
- Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hofer, B.K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, 39 (1), 1-3.
- Hofer, B.K. dan Pintrich, P.R. (1997) The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research*, 67, 88-140
- Howell, A. J., Watson, D. C., Powell, R. A., & Buro, K. (2006). Academic procrastination: the pattern and correlates of behavioural postponement. *Personality and Individual Differences*, 40, 1519–1530.
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of MidWestern collage students. *Education*, 124(2), 310–321.
- Jehng, J.C., Johnson, S.D. & Anderson, R.C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, 18, 23-25.
- Johnson, E.M., Green, K.E. and Kluever, R.C. (2000) .'Psychometric characteristics of the revised procrastination inventory', *Research in Higher Education*, 41, pp. 269-271.

- Klassen, R.M. (2010). Academic Procrastination in Two Settings: Motivation Correlates, Behavioral Patterns, and Negative Impact of Procrastination in Canada and Singapore. *Journal of Applied Psychology* (3), 361–379 doi: 10.1111/j.1464-0597.2009.00394.x
- Klingsieck, K. B. (2013). Procrastination: when good things don't come to those who wait. *Eur. Psychol.* 18, 24–34. doi: 10.1027/1016-9040/a000138
- Lee, D. G., Kelly, K. R. & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27–37.
- Li, H. X., Zhang, J. J., Zhao, X., Si, J. W., and Huang, B. J. (2019). Relationship between epistemological beliefs, self-regulated learning and academic procrastination in college students: a moderated mediation model. *Psychol. Dev. Educ.* 35, 557–565.
- Lum, M. K. M. (1960). A comparison of under- and overachieving female college students. *Journal of Educational Psychology*, 51, 109-115.
- Milgram, N. 1991. *Procrastination. Encyclopedia of Human Biology*. New York: Academic Press.
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19.
- Onwuegbuzie, J. A., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries*, 61(1), 45-54.
- Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning*. In *Handbook of self-regulation* (pp. 451-502). Academic Press.
- Przepiorka, A., Blachnio, A., and Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiol. Int.* 36, 1025–1035. doi: 10.1080/07420528.2019.1607370
- Pychyl, T. A., Morin, R. W., & Salmon, B. W. (2000). Procrastination and the planning fallacy: An examination of the study habits of university students. *Journal of Social Behavior and Personality*, 16, 135–151.

<http://search.proquest.com/openview/fd4a18b2e292fb8b354319ee12e658b1/1?pq-origsite=gscholar&cbl=18>

- Ren, Z. (2006). A Cross Cultural Study of Epistemological Belief and Moral Reasoning Between American and China College Student. *Unpublished doctoral dissertation*. University of Old Dominion
- Rothblum, E.D., Solomon, L., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology, 33*, 387–394.
- Runes, D. D. (1971). *Dictionary of Philosophy*. Totawa, New Jersey: Adam S. & Co.
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology, 82*, 498-504.
- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology, 33*, 135-145.
- Senecal, C., Koestner, R., and Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counseling Psychology, 31*, 503-509.
- Stainton, M., Lay, C. H., & Flett, G. L. (2000). Procrastination: Current issues and new directions. (J. Ferrari, & T. Pychyl, Eds.) *Journal of Social Behavior and Personality, 15*(5), 297–312.
- Stead, R., Shanahan, M. J., and Neufeld, R. W. J. (2010). "I'll go to therapy, eventually": procrastination, stress and mental health. *Pers. Individ. Diff. 49*, 175–180. doi: 10.1016/j.paid.2010.03.028
- Steel, P. (2007). The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin, 133*, 65-94. <http://dx.doi.org/10.1037/0033-2909.133.1.65>
- Tice, D. M. & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychology Science, 8*, 454-458.

- Tuckman, B., & Schouwenburg, H. C. (2004). Behavioral Interventions for Reducing Procrastination among University Students. In H. C. Schouwenburg, C. H. Lay, T. A. Pychyl, & J. R. Ferrari (Eds.), *Counselling the Procrastinator in Academic Settings* (pp. 91-103). Washington DC: American Psychological Association. <http://dx.doi.org/10.1037/10808-007>
- Tullier, M. (2000). *The complete idiot's guide to overcoming procrastination*. Indianapolis, IN: Alpha Books.
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35, 1401-1418. <https://doi.org/10.1016/S0191-88690200358-6>
- Zhang, C. H., Si, J. W., and Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol.* 26, 106–109.
- Ziegler, N., and Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: the link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learn. Individ. Diff.* 64, 71–82. doi: 10.1016/j.lindif.2018.04.009

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

Abstract: The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of believe about knowledge, believe about learning and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are four types of scales used in the data collection process: the scale of believe about knowledge, the scale believe about learning, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157, p = 0.028$), belief about knowledge affects academic procrastination ($r = -0.157, p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199, p = 0.040$), belief about learning affects academic procrastination ($r = -0.147, p = 0.019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097, p = 0.030$).

Keywords: Belief about knowledge, belief about learning, self-regulation in learning and academic procrastination.

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Hailikari, Katajavuori, & Asikainen, 2021)). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Ge, Li, and Li, 2018; Liu, Cheng, Hu, Pan and Zhao, 2020), affective states including shame and guilt (Oflazian & Borders, 2022), one's characteristics such as dependence (Johnson, Green, & Kluever, 2000), locus of control includes intrinsic and extrinsic motivation (Carden, Bryant, & Moss, 2004; Batubara, 2017), control system (van Eerde & Venus, 2018; Mao, Chen, Wei, Luo & Liu, 2022), role conflict (Senécal, Julien, & Guay, 2003), social activities (Jackson, Weiss, Lundquist, & Hooper, 2003), personality roles (Lee, Kelly, & Edwards, 2006), situational characteristics and traits (Stainton, Lay, & Flett, 2000) and self-regulation (Steel, 2007; Ziegler & Opdenakker, 2018; Syapira, Budiman and Selamat, 2022).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (van Eerde, 2003) It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Eisenbeck, Carrenob, & Uclés-Juárezb, 2019), 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkıs and Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Eisenbeck, Carrenob, & Uclés-Juárezb, 2019), while Millgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Steel (2007) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be

emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile Alblwi, et.al., (2020) that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

Epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known (Ren, 2006). The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer & Pintrich, 1997).

According to Schommer-Aikins (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is

complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research (Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2002).

Schommer (2004) stated that epistemological beliefs require what students believe about the nature of knowledge and believe about learning. Belief about knowledge consists of three dimensions. First, knowledge comes from authorities or experts such as teachers, lecturers or reference books, compared to logic and thought. Second, knowledge is definite, absolute, unchanging, and not tentative. Third, a regular process. Jehng et al. (1993) explain that the dimension of the regular process, or what is called rigid learning, is a dimension of belief whether learning is a process that is passively accepted by individuals, or the process of formulating the fact that individuals independently develop their ideas. Furthermore, the belief about learning consists of two dimensions. First, quick learning. Second, innate ability. Innate ability is a level of belief that the ability to learn is innate, rather than acquired through learning (Jehng et al. 1993).

In the procrastination literature, Abdi Zarrin, Gracia, & Paixão (2020) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things

(Svartdal, Dahl, Gamst-Klaussen, Koppenborg and Klingsieck, 2020). Interpretively, this condition may be a natural result of underdeveloped epistemological belief.

The procrastination appears to be a chronic academic pattern (Ferrari, Johnson, & McCown, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2011), sleep quality (Przepiorka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh and Roy, 2017; Ziegler and Opdenakker, 2018; Li et al., 2019), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency, lower academic self-esteem, and academic stress (Flett, et al., 2016). Academic procrastination may increase from one year to the next in college (Bozgun, & Baytemir, 2022). Steel (2007) stated that procrastination is detrimental to academic performance leading to lower grades and failure. Ziegler & Opdenakker, 2018) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief require what students believe about the nature of knowledge and believe about learning, self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (1986) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-

regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons, (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer & Heggstad, 1997). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation (Steel, 2007; Syapira, Budiman and Selamat, 2022) particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time .

Rationale of the Current Study

Cases of student academic procrastination have increased dramatically. This case occurs, especially in Islamic universities (Rahman, 2020). Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent academic procrastination, it will certainly be a problem for them, and can also be considered as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief require what students believe about the nature of knowledge and believe about learning and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent. Thus the hypothesis can be put forward:

Hypothesis

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling with the reasons as stated by Hadi (2000) that the election of a group of subjects based on certain characteristics or traits that considered to have a close relationship with the characteristics or characteristics previously known population which the steps to take the subject as a sample are carried out by, *first*, determining where students come from the Islamic Guidance and Counseling study program. *Second*, students who have taken thesis and *third* are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Table 1. Participant characteristics (N=277)

Variable	Percentage (n)
<i>Gender:</i>	
Woman	61.7 (171)
Man	38.3 (106)
<i>Age:</i>	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
<i>Range of work for the current semester:</i>	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Research Instruments

Four different scales were used in the data collection process. The scale is prepared based on the sumated rating method consisting of the five levels of assessment. The

magnitude of the value ranges from 0 to 4. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes aspects; (1) authority/expert knowledge that it derives from people who know more/an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; *"I like the class where the teacher before teaching determines the unit of learning program"*, *"The answers in the reference book are very helpful because I am not sure of my own solutions"* and *"I feel comfortable when dealing with uncertain learning conditions"*.

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng, Johnson, & Anderson, Jehng (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *"If I can't understand something quickly, I usually have difficulty in learning it as a whole"* and *"Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students."*

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *"If I plan something, I'm pretty sure I can carry it out."* The metacognition dimension consists of 9 items, examples of which are; *"To produce a good work, I determine every step in the preparation"*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *"The biggest problem for me is hard to begin my ta"*.

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; “*In preparing the lecture task which has deadline, I often waste the time by doing others*” and “*I always say I will do it tomorrow*”.

Validity test is done through unidimensionality test on each construct with confirmatory factor analysis. Based on the results of confirmatory analysis, it is found that the fit criteria value has been achieved well. The reliability Alpha Cronbach calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements. A summary of the validity and reliability test results of each research instrument can be seen in table 2.

Table 2. Results of validity and reliability of research instruments

Variable	Standarized loading	Cronbach <i>a</i>
<i>Belief about Knowledge</i>		0,853
Centain Knowledge	0,805	
Omniscient	0,824	
Simple Knowledge	0,755	
<i>Belief about Learning</i>		0,843
Innate ability	0,773	
Quick learning	0,826	
<i>Self Regulation</i>		0,871
Motivation	0,833	
Metacognition	0,918	

Behavior	0,733	
<i>Academic Procrastination</i>		0,869
Delay in starting to complete the performance	0,912	
Slowness in doing the task	0,889	
Time gap between the plan and the actual performance	0,726	
Tendency to do other activities	0,566	

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the **Analysis of MOment Structures** (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 3 below:

Table 3. Description of research data

Variable	N	Minimal	Maximal	Mean	Std. Deviation
Belief about knowledge	277	0	32	21,17	6,949
Belief about learning	277	0	12	7,98	2,475
Self-regulation	277	0	120	67,77	27,362
Academic Procrastination	277	10	116	82,54	20,669

Based on table 2 above, it is known that the belief about knowledge variable has an empirical score of 21.17, with a standard deviation of 6.949, the belief about learning variable has an empirical score of 7.98, with a standard deviation of 2.475, the variable of

self-regulation in learning has an empirical mean score of 67.77, with a standard deviation of 27.362, and the academic procrastination variable has an empirical mean score of 82.54 with a standard deviation of 20.669.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, p = 0.000), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in Figure 1.

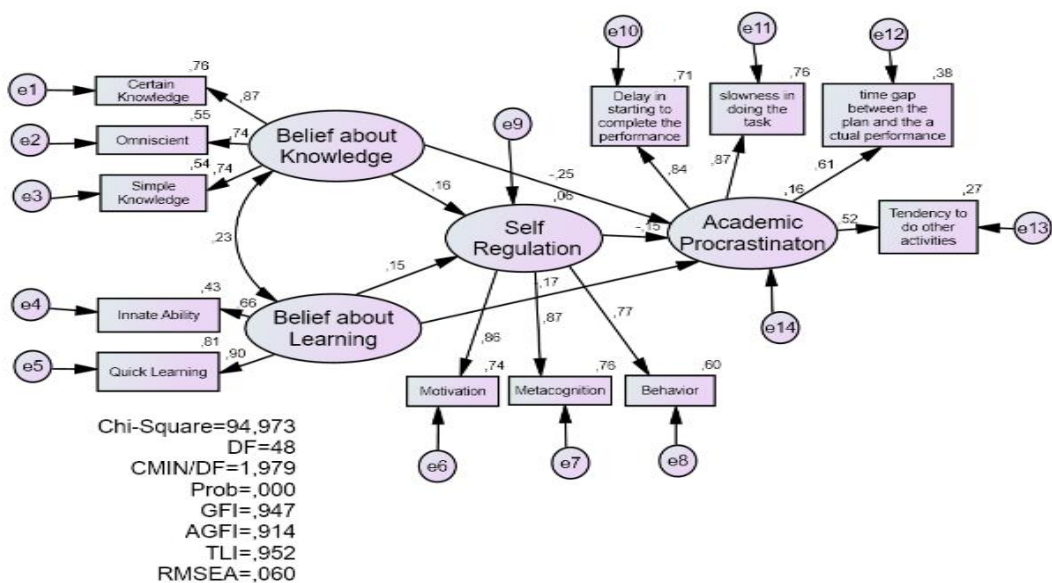


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 4.

Table 4: The Result of Causality Test Regression Weight

	Estimate	S.E.	C.R.	P
The variable of belief about knowledge on self-regulation in learning	0,157	0,071	2,203	0,028
The variable of belief about knowledge on academic procrastination	-0,157	0,047	-3,314	0,000
The variable of belief about learning on self-regulation in learning	0,199	0,097	2,053	0,040
The variable of belief about learning towards academic procrastination	-0,147	0,063	-2	0,019
The variables of self-regulation in learning towards academic procrastination	-0,097	0,045	-2	0,030

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097$, $p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have

a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Steel, 2007; Abdi Zarrin, Gracia & Paixão, 2020; Unda-López et al., 2022). Fear of failure associated with self-efficacy (Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (Solomon & Rothblum, 1984; Ferrari, Keane, Wolfe, & Beck, 1998; Hess, Sherman, & Goodman, 2000; Senecal, Koestner, & Vallerand, 1995) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (*authority/expert knowledge*) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1998) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill, time, and effort problems of more or lack of independent learning (Ghosh & Roy, 2017; Hailikari, Katajavuori & Asikainen, 2021; Hong, Lee, & Ye, 2021).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et.al., 1993; Schommer, 1990).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Klassen, Krawchuk, Lynch, & Rajani, 2008; Klassen, et.al, 2010; Steel, 2007; Ziegler & Opdenakker, 2018; Syapira, Budiman & Selamat, 2022).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not

complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

REFERENCES

- Abdi Zarrin, S., Gracia, E., & Paixão, M. P. (2020). Prediction of academic procrastination by fear of failure and self-regulation. *Educational Sciences: Theory and Practice*, 20(3), 34 - 43. <http://dx.doi.org/10.12738/jestp.2020.3.003>
- Alblwi, A., McAlaney, J., Altuwairiqi, M., Stefanidis, A., Phalp, K. And Ali, R. (2020) Procrastination on Social Networks: Triggers and Countermeasures. *PSIHOLOGIJA, Online First*, 1–18. DOI: <https://doi.org/10.2298/PSI190902016A>
- Balkıs, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relation with demographics and individual preferences [Akademik erteleme davranışının öğretmen adayları arasındaki yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi]. *Journal of Theory and Practice in Education / Eğitimde Kuram ve Uygulama*, 5(1), 18–32.
- Bandura, A. (1986). *Social foundations of thought and action; a Social Cognitive Theory*. Englewood Cliffs, New Jersey: Prentice-Hall Inc.
- Batubara, J. (2017). The contribution of locus of control to academic procrastination of Islamic education management students in Indonesia. *Al-TaLim Journal*, 24(1). doi: <http://dx.doi.org/10.15548/jt.v24i1.260>
- Bozgun, K. & Baytemir, K. (2022) Academic Self Efficacy and Dispositional Hope as Predictors of Academic Procrastination: The Mediating Effect of Academic Intrinsic Motivation. *Participatory Educational Research (PER)*, 9(3), pp. 296-314, <http://dx.doi.org/10.17275/per.22.67.9.3>
- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95, 581-582. <http://doi:10.2466/pr0.95.2.581-582>
- Eisenbeck, N., Carrenob, D. F., & Uclés-Juárezb, U. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, 13, 103–108. <https://doi.org/10.1016/j.jcbs.2019.07.007>

- Ferrari, J. R., Parker, J. T. & Ware, C.B. (1992). Academic Procrastination: Personality correlates with Meyer-Briggs Types Self Efficay and Academic Locus Of Control. *Journal Of Social Behavior and Personality*, 7,495-502.
- Ferrari, J. (2017). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian.
- Ferrari, J.R., Keane, S.M., Wolfe,R.N.,\$ Beck B.L. (1998). The antecedents and consequences of academic excuse making: examining individual differences in procrastination. *Research in higher education*, 39.
- Ferrari,J.R.Johnson,J.L & McCown.W.G. (1995). *Procrastination and Task Avoidance, Theory, Research, and Treatment*. NewYork:Plenum Pers
- Flett, A. L., Haghbin, M., & Pychyl, T. A. (2016). Procrastination and depression from a cognitive per-spective: An exploration of the associations among procrastinatory automatic thoughts, rumination, and mindfulness. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 34(3), 169–186. <https://doi.org/10.1007/s10942-016-0235-1>
- Ge, C., Li, C. D., and Li, S. J. (2018). Study on the relationship between the junior high school students' self-efficacy and academic procrastination. *J. Zhoukou Norm. Univ.* 35, 146–152.
- Ghosh, R., and Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students Is there any gender divide? *Gender Manag.* 32, 518–534. <http://doi:10.1108/gm-01-2017-0011>
- Gueorguieva, J. M. (2011). Procrastination: A Measurement of Types. *Doctoral Thesis*, Western Illinois University, Markham.
- Hadi, S. (2000). *Metodologi Research. Jilid III*. Yogyakarta: Penerbit Andi.
- Hailikari, T., Katajavuori, N. & Asikainen, H. (2021) Understanding procrastination: A case of a study skills course. *Social Psychology of Education* 24:589–606 <https://doi.org/10.1007/s11218-021-09621-2>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness predicts academic procrastination: The mediating role of neuroticism. *Journal of Social Behavior & Personality*, 15(5), 61-74.

- Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hofer, B.K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, 39 (1), 1-3. http://doi:10.1207/s15326985ep3901_1
- Hofer, B.K. dan Pintrich, P.R. (1997) The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research*, 67, 88-140. <http://doi:10.3102/00346543067001088>
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, 174(7), Article 110673. <https://doi.org/10.1016/j.paid.2021.110673>
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of MidWestern collage students. *Education*, 124(2), 310–321.
- Jehng, J.C., Johnson, S.D. & Anderson, R.C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, 18, 23-25.
- Johnson, E.M., Green, K.E. and Kluever, R.C. (2000) . 'Psychometric characteristics of the revised procrastination inventory', *Research in Higher Education*, 41, pp. 269-271.
- Klingsieck, K. B. (2013). Procrastination: when good things don't come to those who wait. *Eur. Psychol.* 18, 24–34. <http://doi:10.1027/1016-9040/a000138>
- Lee, D. G., Kelly, K. R. & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27–37.

- Liu G, Cheng G, Hu J, Pan Y and Zhao S (2020) Academic Self-Efficacy and Postgraduate Procrastination: A Moderated Mediation Model. *Front. Psychol.* 11:1752. <http://doi:10.3389/fpsyg.2020.01752>
- Mao, B.; Chen, S.; Wei, M.; Luo, Y.; Liu, Y. (2022). Future Time Perspective and Bedtime Procrastination: The Mediating Role of Dual-Mode Self-Control and Problematic Smartphone Use. *Int. J. Environ. Res. Public Health* 19, 10334. <https://doi.org/10.3390/ijerph191610334>
- Milgram, N. (1991). *Procrastination. Encyclopedia of Human Biology*. New York: Academic Press.
- Oflazian, J.S.& Borders, A. (2022). Does Rumination Mediate the Unique Effects of Shame and Guilt on Procrastination?. *Journal of Rational-Emotive & Cognitive-Behavior Therapy* <https://doi.org/10.1007/s10942-022-00466-y>
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19. <https://doi.org/10.1080/0260293042000160384>
- Onwuegbuzie, J. A., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries*, 61(1), 45-54. <https://doi.org/10.5860/crl.61.1.45>
- Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning. In Handbook of self-regulation* (pp. 451-502). Academic Press.
- Przepiorka, A., Blachnio, A., and Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiol. Int.* 36, 1025–1035. <http://doi:10.1080/07420528.2019.1607370>
- Rahman, I. (2020). The Development of E-Counseling Gestalt Prophetic to Help Students Cope with Academic Procrastination in Indonesian Islamic Higher Education. *Islamic Guidance and Counseling Journal*,3(1). <https://doi.org/10.25217/igcj.v3i1.614>

- Ren, Z. (2006). A Cross Cultural Study of Epistemological Belief and Moral Reasoning Between American and China College Student. *Unpublished doctoral dissertation*. University of Old Dominion
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology*, 82(3), 498–504. <https://doi.org/10.1037/0022-0663.82.3.498>
- Schommer, M. A. (2004). Explaining the Epistemological Belief System: Introducing the Embedded Systemic Model and Coordinated Research Approach. *Educational Psychologist*, 39, 19-29. https://doi.org/10.1207/s15326985ep3901_3
- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, 33, 135-145. <https://doi/10.1002/ejsp.144>
- Senecal, C., Koestner, R., and Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology*, 135, 607-619. <http://doi:10.1080/00224545.1995.9712234>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counseling Psychology*, 31, 503-509. <https://doi/10.1037/0022-0167.31.4.503>
- Stainton, M., Lay, C. H., & Flett, G. L. (2000). Procrastination: Current issues and new directions. (J. Ferrari, & T. Pychyl, Eds.) *Journal of Social Behavior and Personality*, 15(5), 297–312.
- Stead, R., Shanahan, M. J., and Neufeld, R. W. J. (2010). "I'll go to therapy, eventually": procrastination, stress and mental health. *Pers. Individ. Diff.* 49, 175–180. <http://doi:10.1016/j.paid.2010.03.028>
- Steel, P. (2007). The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin*, 133, 65-94. <http://dx.doi.org/10.1037/0033-2909.133.1.65>
- Svartdal F, Dahl TI, Gamst-Klaussen T, Koppenborg M and Klingsieck KB (2020) How Study Environments Foster Academic Procrastination: Overview

- and Recommendations. *Front. Psychol.* 11:540910.
<http://doi:10.3389/fpsyg.2020.540910>
- Syapira, S.A., Budiman and Selamat, M. N. (2022). Self-Efficacy and Self-Regulation With Academic Procrastination In Muslim Adolescents During The Online Learning Period. *Psikis: Jurnal Psikologi Islami Vol* 8 (1), 88-101. DOI: <https://doi.org/10.19109/psikis.v8i1.11894>
- Unda-López, A.; Osejo-Taco, G.; Vinueza-Cabezas, A.; Paz, C.; Hidalgo-Andrade, P. (2022). Procrastination during the COVID-19 Pandemic: A Scoping Review. *Behav. Sci.* 12, 38. <https://doi.org/10.3390/bs12020038>
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35, 1401-1418.
<http://doi.org/10.1016/S0191-88690200358-6>
- van Eerde, W., and Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: the moderating role of trait self-control. *Front. Psychol.* 9:2029. <http://doi:10.3389/fpsyg.2018.02029>
- Zhang, C. H., Si, J. W., and Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol.* 26, 106–109.
- Ziegler, N., & Opdenakker, M-C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learning and Individual Differences*, 64, 71-82.
<https://doi.org/10.1016/j.lindif.2018.04.009>
- Zimmerman, B.J. & Martinez-Pons, M. (1990). Student differences in self regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82, 51-59.
<https://psycnet.apa.org/doi/10.1037/0022-0663.82.1.51>
- Zimmerman, B.J. (1989). A Sosial Cognitive view of Self Regulated Academic Learning. *Journal of Educational Psychology*, 81, 329-339.
<http://doi:10.1037/0022-0663.81.3.329>

Notifications



[IGCJ] Editor Decision

2022-09-24 09:03 AM

Dear Dr. M. Nur Ghufron:

We have reached a decision regarding your submission to Islamic Guidance and Counseling Journal (Submission Portal - New!), "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students".

Our decision is to **Accept** your Submission for Publication in Islamic Guidance and Counseling Journal.

Before preparation of the proofs, the manuscript will undergo copy-editing to align it with the journal's editorial standards. You will be contacted by the editorial team should any questions arise.

From now on, any request for substantial changes in content (changes of title and authorship, new results and corrected values, changes in figures and tables) will be subject to a completely new peer-review process.

Thank you for considering the Islamic Guidance and Counseling Journal for the publication of your paper.

Best regards,

Aprezo Pardodi Maba

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung

aprezopm@gmail.com

Editorial Team of [Islamic Guidance and Counseling Journal](#)

Listed in [Scopus \(Q2\)](#), [Scimago JR \(0.170\)](#) & [DOAJ Seal](#)

Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Republic of Indonesia

Notifications



[IGCJ] Editor Decision

2022-09-24 09:03 AM

Dear Dr. M. Nur Ghufron:

We have reached a decision regarding your submission to Islamic Guidance and Counseling Journal (Submission Portal - New!), "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students".

Our decision is to **Accept** your Submission for Publication in Islamic Guidance and Counseling Journal.

Before preparation of the proofs, the manuscript will undergo copy-editing to align it with the journal's editorial standards. You will be contacted by the editorial team should any questions arise.

From now on, any request for substantial changes in content (changes of title and authorship, new results and corrected values, changes in figures and tables) will be subject to a completely new peer-review process.

Thank you for considering the Islamic Guidance and Counseling Journal for the publication of your paper.

Best regards,

Aprezo Pardodi Maba

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung

aprezopm@gmail.com

Editorial Team of [Islamic Guidance and Counseling Journal](#)

Listed in [Scopus \(Q2\)](#), [Scimago JR \(0.170\)](#) & [DOAJ Seal](#)

Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Republic of Indonesia

Notifications



[IGCJ] Editor Decision

2022-10-30 06:52 PM

M. Nur Ghufron:

The editing of your submission, "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students," is complete. We are now sending it to production.

Submission URL: <https://igcjournal.com/index.php/submissionportal/authorDashboard/submission/4>

Editorial Team of [Islamic Guidance and Counseling Journal](#)

Listed in [Scopus \(Q2\)](#), [Scimago JR \(0.170\)](#) & [DOAJ Seal](#)

Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Republic of Indonesia

Notifications



[IGCJ] Editor Decision

2022-10-30 06:52 PM

M. Nur Ghufron:

The editing of your submission, "The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of College Students," is complete. We are now sending it to production.

Submission URL: <https://igcjournal.com/index.php/submissionportal/authorDashboard/submission/4>

Editorial Team of [Islamic Guidance and Counseling Journal](#)

Listed in [Scopus \(Q2\)](#), [Scimago JR \(0.170\)](#) & [DOAJ Seal](#)

Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Republic of Indonesia

ORCID and Authors' Short Bio



Participants

Aprezo Pardodi Maba (aprezopm)

M. Nur Ghufron (ghufron)

Assistant Editor (aeditor)

Messages

Note	From
<p>Dear Dr. Ghufron, please make a short biography for each author, like the example below. Also, please provide us with the ORCID. Thank you! :)</p> <p>"Sutarto Sutarto, Institut Agama Islam Negeri Curup, Indonesia</p> <p>He is a lecturer of Islamic education at Institut Agama Islam Negeri Curup. He received his doctoral degree from Universitas Islam Negeri Imam Bonjol Padang. Nowadays, he occupies the position as the director of the graduate program at Institut Agama Islam Negeri Curup. His research interests subsume Islamic studies, Islamic psychology, and Islamic counseling."</p>	<p>aeditor 2022-10-21 01:27 AM</p>

[Add Message](#)

ORCID and Authors' Short Bio



Participants

Aprezo Pardodi Maba (aprezopm)

M. Nur Ghufron (ghufron)

Assistant Editor (aeditor)

Messages

Note	From
<p>Dear Dr. Ghufron, please make a short biography for each author, like the example below. Also, please provide us with the ORCID. Thank you! :)</p> <p>"Sutarto Sutarto, Institut Agama Islam Negeri Curup, Indonesia</p> <p>He is a lecturer of Islamic education at Institut Agama Islam Negeri Curup. He received his doctoral degree from Universitas Islam Negeri Imam Bonjol Padang. Nowadays, he occupies the position as the director of the graduate program at Institut Agama Islam Negeri Curup. His research interests subsume Islamic studies, Islamic psychology, and Islamic counseling."</p>	<p>aeditor 2022-10-21 01:27 AM</p>

[Add Message](#)

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

Abstract: The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of believe about knowledge, believe about learning and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are four types of scales used in the data collection process: the scale of believe about knowledge, the scale believe about learning, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), belief about knowledge affects academic procrastination ($r = -0.157$, $p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199$, $p = 0.040$), belief about learning affects academic procrastination ($r = -0.147$, $p = 0.019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097$, $p = 0.030$).

Keywords: Belief about knowledge, belief about learning, self-regulation in learning and academic procrastination.

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Hailikari, Katajavuori, & Asikainen, 2021)). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Ge, Li, and Li, 2018; Liu, Cheng, Hu, Pan and Zhao, 2020), affective states including shame and guilt (Oflazian & Borders, 2022), one's characteristics such as dependence (Johnson, Green, & Kluever, 2000), locus of control includes intrinsic and extrinsic motivation (Carden, Bryant, & Moss, 2004; Batubara, 2017), control system (van Eerde & Venus, 2018; Mao, Chen, Wei, Luo & Liu, 2022), role conflict (Senécal, Julien, & Guay, 2003), social activities (Jackson, Weiss, Lundquist, & Hooper, 2003), personality roles (Lee, Kelly, & Edwards, 2006), situational characteristics and traits (Stainton, Lay, & Flett, 2000) and

self-regulation (Steel, 2007; Ziegler & Opdenakker, 2018; Syapira, Budiman and Selamat, 2022).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (van Eerde, 2003) It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Eisenbeck, Carrenob, & Uclés-Juárezb, 2019), 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis and Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Eisenbeck, Carrenob, & Uclés-Juárezb, 2019), while Millgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Steel (2007) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social

activity opportunities. Underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile Alblwi, et.al., (2020) that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

Epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known (Ren, 2006). The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer & Pintrich, 1997).

According to Schommer-Aikins (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students

are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research (Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2002).

Schommer (2004) stated that epistemological beliefs require what students believe about the nature of knowledge and believe about learning. Belief about knowledge consists of three dimensions. First, knowledge comes from authorities or experts such as teachers, lecturers or reference books, compared to logic and thought. Second, knowledge is definite, absolute, unchanging, and not tentative. Third, a regular process. Jehng et al. (1993) explain that the dimension of the regular process, or what is called rigid learning, is a dimension of belief whether learning is a process that is passively accepted by individuals, or the process of formulating the fact that individuals independently develop their ideas. Furthermore, the belief about learning consists of two dimensions. First, quick learning. Second, innate ability. Innate ability is a level of belief that the ability to learn is innate, rather than acquired through learning (Jehng et al. 1993).

In the procrastination literature, Abdi Zarrin, Gracia, & Paixão (2020) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Svartdal, Dahl, Gamst-Klaussen, Koppenborg and Klingsieck, 2020). Interpretively, this condition may be a natural result of underdeveloped epistemological belief.

The procrastination appears to be a chronic academic pattern (Ferrari, Johnson, & McCown, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2011), sleep quality (Przepiorka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh and Roy, 2017; Ziegler and Opdenakker, 2018; Li et al., 2019), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency, lower academic self-esteem, and academic stress (Flett, et al., 2016). Academic procrastination may increase from one year to the next in college (Bozgun, & Baytemir, 2022). Steel (2007) stated that procrastination is detrimental to academic performance leading to lower grades and failure. Ziegler & Opdenakker, 2018) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief require what students believe about the nature of knowledge and believe about learning, self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social

cognitive theory. Bandura (1986) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons, (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer & Heggstad, 1997). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-

regulation (Steel, 2007; Syapira, Budiman and Selamat, 2022) particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time .

Rationale of the Current Study

Cases of student academic procrastination have increased dramatically. This case occurs, especially in Islamic universities (Rahman, 2020). Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent academic procrastination, it will certainly be a problem for them, and can also be considered as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief require what students believe about the nature of knowledge and believe about learning and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent. Thus the hypothesis can be put forward:

Hypothesis

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling with the reasons as stated by Hadi (2000) that the election of a group of subjects based on certain characteristics or traits that considered to have a close relationship with the characteristics or characteristics previously known population which the steps to take the subject as a sample are carried out by, *first*, determining where students come from the Islamic Guidance and Counseling study program. *Second*, students who have taken thesis and *third* are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Table 1. Participant characteristics (N=277)

Variable	Percentage (n)
<i>Gender:</i>	
Woman	61.7 (171)
Man	38.3 (106)
<i>Age:</i>	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)

Range of work for the current semester:

2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Research Instruments

Four different scales were used in the data collection process. The scale is prepared based on the sumated rating method consisting of the five levels of assessment. The magnitude of the value ranges from 0 to 4. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes aspects; (1) authority/expert knowledge that it derives from people who know more/an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; "*I like the class where the teacher before teaching determines the unit of learning program*", "*The answers in the reference book are very helpful because I am not sure of my own solutions*" and "*I feel comfortable when dealing with uncertain learning conditions*".

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng, Johnson, & Anderson, Jehng (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; "*If I can't understand something quickly, I usually have difficulty in learning it as a whole*" and "*Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students.*".

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; "*If I plan something, I'm pretty sure I can carry it out.*" The metacognition dimension consists of 9 items, examples of which are; "*To produce a good work, I determine every step in the preparation*". Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; "*The biggest problem for me is hard to begin my ta*".

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; "*In preparing the lecture task which has deadline, I often waste the time by doing others*" and "*I always say I will do it tomorrow*".

Validity test is done through unidimensionality test on each construct with confirmatory factor analysis. Based on the results of confirmatory analysis, it is found that the fit criteria value has been achieved well. The reliability Alpha Cronbach calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements. A summary of the validity and reliability test results of each research instrument can be seen in table 2.

Table 2. Results of validity and reliability of research instruments

Variable	Standarized loading	Cronbach <i>a</i>
<i>Belief about Knowledge</i>		0,853
Certain Knowledge	0,805	
Omniscient	0,824	
Simple Knowledge	0,755	
<i>Belief about Learning</i>		0,843
Innate ability	0,773	
Quick learning	0,826	
<i>Self Regulation</i>		0,871
Motivation	0,833	
Metacognition	0,918	
Behavior	0,733	
<i>Academic Procrastination</i>		0,869
Delay in starting to complete the performance	0,912	
Slowness in doing the task	0,889	
Time gap between the plan and the actual performance	0,726	
Tendency to do other activities	0,566	

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the **Analysis of MOment Structures** (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 3 below:

Table 3. Description of research data

Variable	N	Minimal	Maximal	Mean	Std. Deviation
Belief about knowledge	277	0	32	21,17	6,949
Belief about learning	277	0	12	7,98	2,475
Self-regulation	277	0	120	67,77	27,362
Academic Procrastination	277	10	116	82,54	20,669

Based on table 2 above, it is known that the belief about knowledge variable has an empirical score of 21.17, with a standard deviation of 6.949, the belief about learning variable has an empirical score of 7.98, with a standard deviation of 2.475, the variable of self-regulation in learning has an empirical mean score of 67.77, with a standard deviation of 27.362, and the academic procrastination variable has an empirical mean score of 82.54 with a standard deviation of 20.669.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, $p = 0.000$), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in Figure 1.

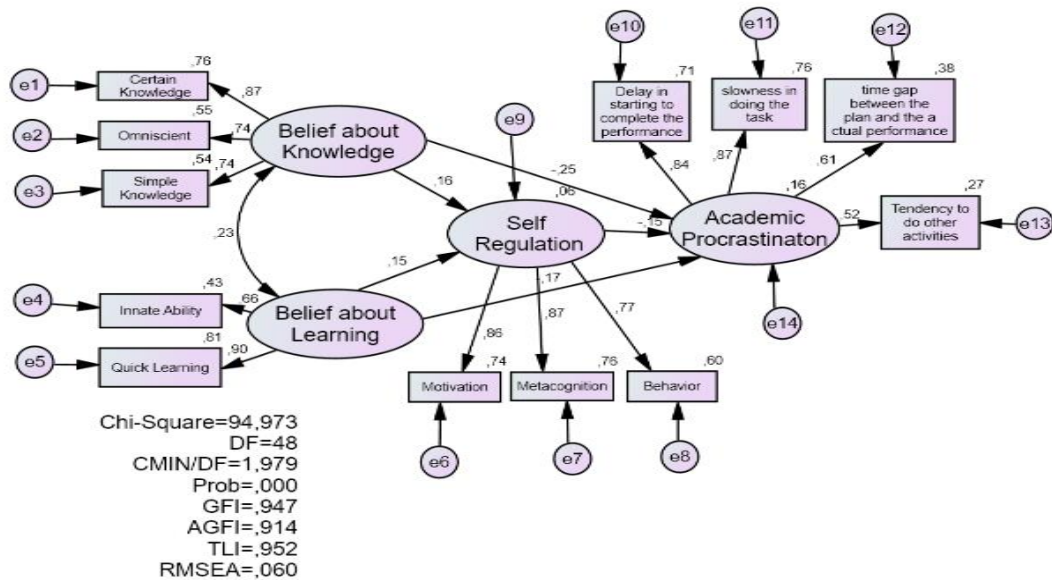


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation’s Influence on Student Academic Procrastination

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 4.

Table 4: The Result of Causality Test Regression Weight

	Estimate	S.E.	C.R.	P
The variable of belief about knowledge on self-regulation in learning	0,157	0,071	2,203	0,028
The variable of belief about knowledge on academic procrastination	-0,157	0,047	-3,314	0,000
The variable of belief about learning on self-regulation in learning	0,199	0,097	2,053	0,040
The variable of belief about learning towards academic procrastination	-0,147	0,063	-2	0,019

The variables of self-regulation in learning towards academic procrastination	-0,097	0,045	-2	0,030
---	--------	-------	----	-------

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097$, $p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Steel, 2007; Abdi Zarrin, Gracia & Paixão, 2020; Unda-López et al., 2022). Fear of failure associated with self-efficacy (Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (Solomon & Rothblum, 1984; Ferrari, Keane, Wolfe, & Beck, 1998; Hess, Sherman, & Goodman, 2000; Senecal, Koestner, & Vallerand, 1995) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (*authority/expert knowledge*) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1998) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate

due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill, time, and effort problems of more or lack of independent learning (Ghosh & Roy, 2017; Hailikari, Katajavuori & Asikainen, 2021; Hong, Lee, & Ye, 2021).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et.al., 1993; Schommer, 1990).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-

regulation is the strongest predictor of procrastination tendencies (Klassen, Krawchuk, Lynch, & Rajani, 2008; Klassen, et.al, 2010; Steel, 2007; Ziegler & Opendakker, 2018; Syapira, Budiman & Selamat, 2022).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide

more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

REFERENCES

- Abdi Zarrin, S., Gracia, E., & Paixão, M. P. (2020). Prediction of academic procrastination by fear of failure and self-regulation. *Educational Sciences: Theory and Practice*, 20(3), 34 - 43. <http://dx.doi.org/10.12738/jestp.2020.3.003>
- Alblwi, A., McAlaney, J., Altuwairiqi, M., Stefanidis, A., Phalp, K. And Ali, R. (2020) Procrastination on Social Networks: Triggers and Countermeasures. *PSIHOLOGIJA, Online First*, 1–18. DOI: <https://doi.org/10.2298/PSI190902016A>
- Balkıs, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relation with demographics and individual preferences [Akademik erteleme davranışının öğretmen adayları arasındaki yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi]. *Journal of Theory and Practice in Education / Eğitimde Kuram ve Uygulama*, 5(1), 18–32.

- Bandura, A. (1986). *Social foundations of thought and action; a Social Cognitive Theory*. Englewood Cliffs, New Jersey: Prentice-Hall Inc.
- Batubara, J. (2017). The contribution of locus of control to academic procrastination of Islamic education management students in Indonesia. *Al-TaLim Journal*, 24(1). doi: <http://dx.doi.org/10.15548/jt.v24i1.260>
- Bozgun, K. & Baytemir, K. (2022) Academic Self Efficacy and Dispositional Hope as Predictors of Academic Procrastination: The Mediating Effect of Academic Intrinsic Motivation. *Participatory Educational Research (PER)*, 9(3), pp. 296-314, <http://dx.doi.org/10.17275/per.22.67.9.3>
- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95, 581-582. <http://doi:10.2466/pr0.95.2.581-582>
- Eisenbeck, N., Carrenob, D. F., & Uclés-Juárezb, U. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, 13, 103–108. <https://doi.org/10.1016/j.jcbs.2019.07.007>
- Ferrari, J, R., Parker, J, T. & Ware, C,B. (1992). Academic Procrastination: Personality correlates with Meyer-Briggs Types Self Efficay and Academic Locus Of Control. *Journal Of Social Behavior and Personality*, 7,495-502.
- Ferrari, J. (2017). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian.
- Ferrari, J.R., Keane, S.M., Wolfe,R.N.,\$ Beck B.L. (1998). The antecedents and consequences of academic excuse making: examining individual differences in procrastination. *Research in higher education*, 39.
- Ferrari,J.R.Johnson,J.L & McCown.W.G. (1995). *Procrastination and Task Avoidance, Theory, Research, and Treatment*. NewYork:Plenum Pers
- Flett, A. L., Haghbin, M., & Pychyl, T. A. (2016). Procrastination and depression from a cognitive per-spective: An exploration of the associations among procrastinatory automatic thoughts, rumination, and

- mindfulness. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 34(3), 169–186. <https://doi.org/10.1007/s10942-016-0235-1>
- Ge, C., Li, C. D., and Li, S. J. (2018). Study on the relationship between the junior high school students' self-efficacy and academic procrastination. *J. Zhoukou Norm. Univ.* 35, 146–152.
- Ghosh, R., and Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students Is there any gender divide? *Gender Manag.* 32, 518–534. <http://doi:10.1108/gm-01-2017-0011>
- Gueorguieva, J. M. (2011). Procrastination: A Measurement of Types. *Doctoral Thesis*, Western Illinois University, Markham.
- Hadi, S. (2000). *Metodologi Research. Jilid III*. Yogyakarta: Penerbit Andi.
- Hailikari, T., Katajavuori, N. & Asikainen, H. (2021) Understanding procrastination: A case of a study skills course. *Social Psychology of Education* 24:589–606 <https://doi.org/10.1007/s11218-021-09621-2>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness predicts academic procrastination: The mediating role of neuroticism. *Journal of Social Behavior & Personality*, 15(5), 61-74.
- Hofer, B. K. (2002). Personal epistemology as a psychological and educational construct: An introduction. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 3-14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hofer, B.K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, 39 (1), 1-3. http://doi:10.1207/s15326985ep3901_1
- Hofer, B.K. dan Pintrich, P.R. (1997) The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Review of Educational Research*, 67, 88-140. <http://doi:10.3102/00346543067001088>
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the

- coronavirus lockdown. *Personality and Individual Differences*, 174(7), Article 110673. <https://doi.org/10.1016/j.paid.2021.110673>
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of MidWestern collage students. *Education*, 124(2), 310–321.
- Jehng, J.C., Johnson, S.D. & Anderson, R.C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, 18, 23-25.
- Johnson, E.M., Green, K.E. and Kluever, R.C. (2000) .'Psychometric characteristics of the revised procrastination inventory', *Research in Higher Education*, 41, pp. 269-271.
- Klingsieck, K. B. (2013). Procrastination: when good things don't come to those who wait. *Eur. Psychol.* 18, 24–34. <http://doi:10.1027/1016-9040/a000138>
- Lee, D. G., Kelly, K. R. & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences*, 40, 27–37.
- Liu G, Cheng G, Hu J, Pan Y and Zhao S (2020) Academic Self-Efficacy and Postgraduate Procrastination: A Moderated Mediation Model. *Front. Psychol.* 11:1752. <http://doi:10.3389/fpsyg.2020.01752>
- Mao, B.; Chen, S.; Wei, M.; Luo, Y.; Liu, Y. (2022). Future Time Perspective and Bedtime Procrastination: The Mediating Role of Dual-Mode Self-Control and Problematic Smartphone Use. *Int. J. Environ. Res. Public Health* 19, 10334. <https://doi.org/10.3390/ijerph191610334>
- Milgram, N. (1991). *Procrastination. Encyclopedia of Human Biology*. New York: Academic Press.
- Oflazian, J.S.& Borders, A. (2022). Does Rumination Mediate the Unique Effects of Shame and Guilt on Procrastination?. *Journal of Rational-Emotive & Cognitive-Behavior Therapy* <https://doi.org/10.1007/s10942-022-00466-y>

- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education*, 29(1), 3-19. <https://doi.org/10.1080/0260293042000160384>
- Onwuegbuzie, J. A., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries*, 61(1), 45-54. <https://doi.org/10.5860/crl.61.1.45>
- Pintrich, P. R. (2000). *The role of goal orientation in self-regulated learning*. In *Handbook of self-regulation* (pp. 451-502). Academic Press.
- Przepiorka, A., Blachnio, A., and Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiol. Int.* 36, 1025–1035. <http://doi:10.1080/07420528.2019.1607370>
- Rahman, I. (2020). The Development of E-Counseling Gestalt Prophetic to Help Students Cope with Academic Procrastination in Indonesian Islamic Higher Education. *Islamic Guidance and Counseling Journal*,3(1). <https://doi.org/10.25217/igcj.v3i1.614>
- Ren, Z. (2006). A Cross Cultural Study of Epistemological Belief and Moral Reasoning Between American and China College Student. *Unpublished doctoral dissertation*. University of Old Dominion
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology*, 82(3), 498–504. <https://doi.org/10.1037/0022-0663.82.3.498>
- Schommer, M. A. (2004). Explaining the Epistemological Belief System: Introducing the Embedded Systemic Model and Coordinated Research Approach. *Educational Psychologist*, 39, 19-29. https://doi.org/10.1207/s15326985ep3901_3
- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, 33, 135-145. <https://doi/10.1002/ejsp.144>

- Senecal, C., Koestner, R., and Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology, 135*, 607-619. <http://doi:10.1080/00224545.1995.9712234>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioural correlates. *Journal of Counseling Psychology, 31*, 503-509. <https://doi/10.1037/0022-0167.31.4.503>
- Stainton, M., Lay, C. H., & Flett, G. L. (2000). Procrastination: Current issues and new directions. (J. Ferrari, & T. Pychyl, Eds.) *Journal of Social Behavior and Personality, 15*(5), 297-312.
- Stead, R., Shanahan, M. J., and Neufeld, R. W. J. (2010). "I'll go to therapy, eventually": procrastination, stress and mental health. *Pers. Individ. Diff. 49*, 175-180. <http://doi:10.1016/j.paid.2010.03.028>
- Steel, P. (2007). The Nature of Procrastination: A Meta-Analytic and Theoretical Review of Quintessential Self-Regulatory Failure. *Psychological Bulletin, 133*, 65-94. <http://dx.doi.org/10.1037/0033-2909.133.1.65>
- Svardal F, Dahl TI, Gamst-Klaussen T, Koppenborg M and Klingsieck KB (2020) How Study Environments Foster Academic Procrastination: Overview and Recommendations. *Front. Psychol. 11*:540910. <http://doi:10.3389/fpsyg.2020.540910>
- Syapira, S.A., Budiman and Selamat, M. N. (2022). Self-Efficacy and Self-Regulation With Academic Procrastination In Muslim Adolescents During The Online Learning Period. *Psikis: Jurnal Psikologi Islami Vol 8* (1), 88-101. DOI: <https://doi.org/10.19109/psikis.v8i1.11894>
- Unda-López, A.; Osejo-Taco, G.; Vinueza-Cabezas, A.; Paz, C.; Hidalgo-Andrade, P. (2022). Procrastination during the COVID-19 Pandemic: A Scoping Review. *Behav. Sci. 12*, 38. <https://doi.org/10.3390/bs12020038>
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences, 35*, 1401-1418. <http://doi.org/10.1016/S0191-88690200358-6>

- van Eerde, W., and Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: the moderating role of trait self-control. *Front. Psychol.* 9:2029. <http://doi:10.3389/fpsyg.2018.02029>
- Zhang, C. H., Si, J. W., and Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol.* 26, 106–109.
- Ziegler, N., & Opdenakker, M-C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learning and Individual Differences*, 64, 71-82. <https://doi.org/10.1016/j.lindif.2018.04.009>
- Zimmerman, B.J. & Martinez-Pons, M. (1990). Student differences in self regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82, 51-59. <https://psycnet.apa.org/doi/10.1037/0022-0663.82.1.51>
- Zimmerman, B.J. (1989). A Social Cognitive view of Self Regulated Academic Learning. *Journal of Educational Psychology*, 81, 329-339. <http://doi:10.1037/0022-0663.81.3.329>

The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

 M. Nur Ghufron¹,  Rini Risnawita Suminta²

¹Institut Agama Islam Negeri Kudus, Indonesia

²Institut Agama Islam Negeri Kediri, Indonesia

 emnurghufron78@gmail.com

Article Information:

Received April 30, 2022

Revised August 24, 2022

Accepted August 27, 2022

Keywords: academic procrastination; belief about knowledge; belief about learning; self-regulation in learning

Abstract

The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of believe about knowledge, believe about learning and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are four types of scales used in the data collection process: the scale of believe about knowledge, the scale believe about learning, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), belief about knowledge affects academic procrastination ($r = -0,157$, $p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199$, $p = 0,040$), belief about learning affects academic procrastination ($r = -0.147$, $p = 0,019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097$, $p = 0,030$).

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Hailikari et al., 2021). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Liu et al., 2020; Qiuzhu, 2016), affective states including shame and guilt (Oflazian & Borders, 2022), one's characteristics such as dependence (Johnson et al., 2000), locus of control includes intrinsic and extrinsic motivation (Batubara, 2017; Carden et al., 2004), control system (Mao et al., 2022; van Eerde & Venus, 2018), role conflict (Senécal et al., 2003), social activities (Jackson et al., 2003), personality roles (Lee et al., 2006), situational characteristics and traits (Hockey, 1983), and self-regulation (Steel, 2007; Syapira et al., 2022; Ziegler & Opdenakker, 2018).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it

How to cite:

Ghufron, M. N., & Suminta, R. R. (2022). The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of Muslim College Students. *Islamic Guidance and Counseling Journal*, 5(2). <https://doi.org/10.25217/igcj.v5i2.2700>

E-ISSN:

2614-1566

Published by:

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung

seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (Rahman, 2020; van Eerde, 2003). It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Eisenbeck et al., 2019), 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis & Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Eisenbeck et al., 2019), while Milgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Steel (2007) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile Alblwi et al. (2020) that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (2004; 1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

Epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known (Ren, 2006). The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer, 2001).

According to Schommer (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in

keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research (Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2001).

Schommer (1990) stated that epistemological beliefs require what students believe about the nature of knowledge and believe about learning. Belief about knowledge consists of three dimensions. First, knowledge comes from authorities or experts such as teachers, lecturers or reference books, compared to logic and thought. Second, knowledge is definite, absolute, unchanging, and not tentative. Third, a regular process. Jehng et al. (1993) explain that the dimension of the regular process, or what is called rigid learning, is a dimension of belief whether learning is a process that is passively accepted by individuals, or the process of formulating the fact that individuals independently develop their ideas. Furthermore, the belief about learning consists of two dimensions. First, quick learning. Second, innate ability. Innate ability is a level of belief that the ability to learn is innate, rather than acquired through learning (Jehng et al., 1993).

In the procrastination literature, Zarrinet et al. (2020) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Svardal et al., 2020). Interpretively, this condition may be a natural result of underdeveloped epistemological belief (Baytelman et al., 2020; Merk et al., 2018; Rosman et al., 2018).

The procrastination appears to be a chronic academic pattern (J. R. Ferrari et al., 1992, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2012), sleep quality (Przepiórka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh & Roy, 2017; Ziegler & Opdenakker, 2018), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency, lower academic self-esteem, and academic stress (Flett et al., 2016). Academic procrastination may increase from one year to the next in college (Bozgun & Baytemir, 2021). Steel (2007) stated that procrastination is detrimental to academic performance leading to lower grades and failure. Ziegler & Opdenakker (2018) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2001; 2004) suggested that understanding the barriers to the

change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief require what students believe about the nature of knowledge and believe about learning (Sheehy et al., 2019; Winberg et al., 2019; Xenofontos, 2018), self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (2010) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. If monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer et al., 2008). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation (Steel, 2007; Syapira et al., 2022) particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time .

Rationale of the Current Study

Cases of student academic procrastination have increased dramatically. This case occurs, especially in Islamic universities (Rahman, 2020). Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent

academic procrastination, it will certainly be a problem for them, and can also be considered as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief require what students believe about the nature of knowledge and believe about learning and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent.

Hypotheses

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling with the reasons as stated by Hadi (1984) that the election of a group of subjects based on certain characteristics or traits that considered to have a close relationship with the characteristics or characteristics previously known population which the steps to take the subject as a sample are carried out by, first, determining where students come from the Islamic Guidance and Counseling study program. Second, students who have taken thesis and third are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Research Instruments

Four different scales were used in the data collection process. The scale is prepared based on the sumated rating method consisting of the five levels of assessment. The magnitude of the value ranges from 0 to 4. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The belief about the nature of knowledge

The belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes following aspects (1) authority/expert knowledge that it derives from people who know more/an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8.

Table 1. Participant characteristics (N=277)

Variable	Percentage (n)
Gender	
Woman	61.7 (171)
Man	38.3 (106)
Age	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
Range of work for the current semester	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Examples of items are; *“I like the class where the teacher before teaching determines the unit of learning program”*, *“The answers in the reference book are very helpful because I am not sure of my own solutions”* and *“I feel comfortable when dealing with uncertain learning conditions”*.

The Belief About Learning

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng et al. (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *“If I can't understand something quickly, I usually have difficulty in learning it as a whole”* and *“Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students.”*.

Self-regulation

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *“If I plan something, I'm pretty sure I can carry it out.”* The metacognition dimension consists of 9 items, examples of which are; *“To produce a good work, I determine every step in the preparation”*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *“The biggest problem for me is hard to begin my ta”*.

Academic procrastination

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; *“In preparing the lecture task which has deadline, I often waste the time by doing others”* and *“I always say I will do it tomorrow”*.

Table 2. Results of validity and reliability of research instruments

Variable	Standardized loading	Cronbach a
Belief about Knowledge		0,853
Certain Knowledge	0,805	
Omniscient	0,824	
Simple Knowledge	0,755	
Belief about Learning		0,843
Innate ability	0,773	
Quick learning	0,826	
Self Regulation		0,871
Motivation	0,833	
Metacognition	0,918	
Behavior	0,733	
Academic Procrastination		0,869
Delay in starting to complete the performance	0,912	
Slowness in doing the task	0,889	
Time gap between the plan and the actual performance	0,726	
Tendency to do other activities	0,566	

Table 3. Description of research data

Variable	N	Min	Max	M	SD
Belief about knowledge	277	0	32	21,17	6,949
Belief about learning	277	0	12	7,98	2,475
Self-regulation	277	0	120	67,77	27,362
Academic Procrastination	277	10	116	82,54	20,669

Table 4. The Result of Causality Test Regression Weight

Variables	Estimate	SE	CR	P
Belief about knowledge → self-regulation in learning	0,157	0,071	2,203	0,028
Belief about knowledge → academic procrastination	-0,157	0,047	-3,314	0,000
Belief about learning → self-regulation in learning	0,199	0,097	2,053	0,040
Belief about learning → academic procrastination	-0,147	0,063	-2	0,019
Self-regulation in learning → academic procrastination	-0,097	0,045	-2	0,030

Validity test

Validity test is done through unidimensionality test on each construct with confirmatory factor analysis. Based on the results of confirmatory analysis, it is found that the fit criteria value has been achieved well. The reliability Alpha Cronbach calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements. A summary of the validity and reliability test results of each research instrument can be seen in table 2.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the Analysis of Moment Structures (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 3. Based on table

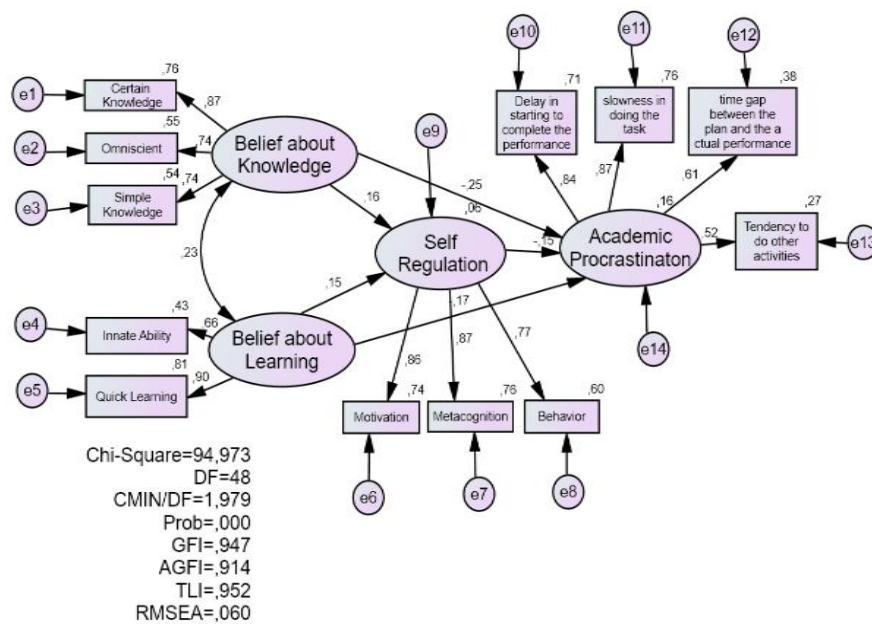


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

2, it is known that the belief about knowledge variable has an empirical score of 21.17, with a standard deviation of 6.949, the belief about learning variable has an empirical score of 7.98, with a standard deviation of 2.475, the variable of self-regulation in learning has an empirical mean score of 67.77, with a standard deviation of 27.362, and the academic procrastination variable has an empirical mean score of 82.54 with a standard deviation of 20.669.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, p = 0.000), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 4.

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning (r = 0.157, p = 0.028), the variable of belief about knowledge has a significant negative effect on academic procrastination (r = -0.157, p = 0.000). The variable of belief about learning also has a significant positive effect on self-regulation in learning (r = 0.199, p = 0.040). The variable of belief about learning has a significant negative effect on academic procrastination (r = -0.147, p = 0.019), the variable of

self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097, p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Abdi Zarrin et al., 2020; Steel, 2007; Unda-López et al., 2022). Fear of failure associated with self-efficacy (J. R. Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (J. R. Ferrari et al., 1995; Hess et al., 2000; Sénécal et al., 1995; Solomon & Rothblum, 1984) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (authority or expert knowledge) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1992) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill,

time, and effort problems of more or lack of independent learning (Ghosh & Roy, 2017; Hailikari et al., 2021; Hong et al., 2021).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et al., 1993; Schommer-Aikins, 2004).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Syapira et al., 2022; Ziegler & Opdenakker, 2018).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through

experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

ACKNOWLEDGEMENT

Please make a paragraph of acknowledgement.

AUTHOR CONTRIBUTION STATEMENT

Please make a paragraph of author contribution statement. See our published content for example.

REFERENCES

- Abdi Zarrin, S., Gracia, E., & Paixão, M. P. (2020). Prediction of academic procrastination by fear of failure and self-regulation. *Educational Sciences: Theory and Practice*, 20(3), 34–43. <https://doi.org/10.12738/jestp.2020.3.003>
- Alblwi, A., McAlaney, J., Altuwairiqi, M., Stefanidis, A., Phalp, K., & Ali, R. (2020). Procrastination on Social Networks: Triggers and Countermeasures*. *Psihologija*, 53(4), 393–410. <https://doi.org/10.2298/PSI190902016A>
- Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relationship with demographics and individual preferences. *Journal of Theory and Practice in Education*, 5(1), 18–32. <http://eku.comu.edu.tr/article/view/1044000004>
- Bandura, A. (2010). Self-Efficacy. In *The Corsini Encyclopedia of Psychology* (pp. 1–3). American Cancer Society. <https://doi.org/10.1002/9780470479216.corpsy0836>
- Batubara, J. (2017). The Contribution of Locus of Control to Academic Procrastination in Islamic Education Management Students in Indonesia. *Al-Ta Lim Journal*, 24(1), 29–36. <https://doi.org/10.15548/jt.v24i1.260>
- Baytelman, A., Iordanou, K., & Constantinou, C. P. (2020). Epistemic beliefs and prior knowledge as predictors of the construction of different types of arguments on socioscientific issues. *Journal of Research in Science Teaching*, 57(8), 1199–1227. <https://doi.org/10.1002/tea.21627>
- Bozgun, K., & Baytemir, K. (2021). Academic Self Efficacy and Dispositional Hope as Predictors of Academic Procrastination: The Mediating Effect of Academic Intrinsic Motivation. *Participatory Educational Research*, 9(3), 296–314. <https://doi.org/10.17275/per.22.67.9.3>
- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95(2), 581–582. <https://doi.org/10.2466/pr0.95.2.581-582>

- Eisenbeck, N., Carreno, D. F., & Uclés-Juárez, R. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, *13*, 103–108. <https://doi.org/10.1016/j.jcbs.2019.07.007>
- Ferrari, J. (2017). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian. [Google Scholar](#)
- Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). Procrastination and Task Avoidance. *Procrastination and Task Avoidance*. <https://doi.org/10.1007/978-1-4899-0227-6>
- Ferrari, J. R., Parker, J. T., & Ware, C. B. (1992). Academic procrastination: Personality correlates with Myers-Briggs types, self-efficacy, and academic locus of control. *Journal of Social Behavior and Personality*, *7*(3), 495–502. [Google Scholar](#)
- Flett, A. L., Haghbin, M., & Pychyl, T. A. (2016). Procrastination and Depression from a Cognitive Perspective: An Exploration of the Associations Among Procrastinatory Automatic Thoughts, Rumination, and Mindfulness. *Journal of Rational - Emotive and Cognitive - Behavior Therapy*, *34*(3), 169–186. <https://doi.org/10.1007/s10942-016-0235-1>
- Ghosh, R., & Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students: Is there any gender divide? *Gender in Management*, *32*(8), 518–534. <https://doi.org/10.1108/GM-01-2017-0011>
- Gueorguieva, J. M. (2012). Procrastination a measurement of types. In *Dissertation Abstracts International Section A: Humanities and Social Sciences* (Vol. 72, Issues 11-A, p. 4006). [Google Scholar](#)
- Hadi, S. (1984). *Metodologi Research 2* (Vol. 2). Penerbit Andi.
- Hailikari, T., Katajavuori, N., & Asikainen, H. (2021). Understanding procrastination: A case of a study skills course. *Social Psychology of Education*, *24*(2), 589–606. <https://doi.org/10.1007/s11218-021-09621-2>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness Predicts Academic Procrastination: The Mediating Role of Neuroticism. *Journal of Social Behavior and Personality*, *15*(5), 61–74. [Google Scholar](#)
- Hockey, G. R. J. (1983). Current Issues and new directions. *Stress and Fatigue in Human Performance*, *15*(5), 363–373. [Google Scholar](#)
- Hofer, B K. (2001). Personal Epistemology. In B K Hofer & P. R. Pintrich (Eds.), *Personal Epistemology* (pp. 3–14). Lawrence Erlbaum Associates. <https://doi.org/10.4324/9781410604316>
- Hofer, Barbara K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, *39*(1), 1–3. https://doi.org/10.1207/s15326985ep3901_1
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, *174*(7). <https://doi.org/10.1016/j.paid.2021.110673>
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of midwestern college students. *Education*, *124*(2), 310–320. [Google Scholar](#)
- Jehng, J. C. J., Johnson, S. D., & Anderson, R. C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, *18*(1), 23–35. <https://doi.org/10.1006/ceps.1993.1004>
- Johnson, E. M., Green, K. E., & Kluever, R. C. (2000). Psychometric characteristics of the revised procrastination inventory. *Research in Higher Education*, *41*(2), 269–279. <https://doi.org/10.1023/A:1007051423054>
- Kanfer, R., Chen, G., & Pritchard, R. (2008). *Work motivation: Past, present and future*. [Google Scholar](#)

- Klingsieck, K. B. (2013). Procrastination when good things don't come to those who wait. *European Psychologist, 18*(1), 24–34. <https://doi.org/10.1027/1016-9040/a000138>
- Lee, D. Gwi, Kelly, K. R., & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences, 40*(1), 27–37. <https://doi.org/10.1016/j.paid.2005.05.010>
- Liu, G., Cheng, G., Hu, J., Pan, Y., & Zhao, S. (2020). Academic Self-Efficacy and Postgraduate Procrastination: A Moderated Mediation Model. *Frontiers in Psychology, 11*(1752). <https://doi.org/10.3389/fpsyg.2020.01752>
- Mao, B., Chen, S., Wei, M., Luo, Y., & Liu, Y. (2022). Future Time Perspective and Bedtime Procrastination: The Mediating Role of Dual-Mode Self-Control and Problematic Smartphone Use. *International Journal of Environmental Research and Public Health, 19*(16), 10334. <https://doi.org/10.3390/ijerph191610334>
- Merk, S., Rosman, T., Muis, K. R., Kelava, A., & Bohl, T. (2018). Topic specific epistemic beliefs: Extending the Theory of Integrated Domains in Personal Epistemology. *Learning and Instruction, 56*, 84–97. <https://doi.org/10.1016/j.learninstruc.2018.04.008>
- Milgram, N. (1991). *Procrastination: Encyclopedia of Human Biology*. Academic Press.
- Oflazian, J. S., & Borders, A. (2022). Does Rumination Mediate the Unique Effects of Shame and Guilt on Procrastination? *Journal of Rational - Emotive and Cognitive - Behavior Therapy. https://doi.org/10.1007/s10942-022-00466-y*
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education, 29*(1), 3–19. <https://doi.org/10.1080/0260293042000160384>
- Onwuegbuzie, A. J., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries, 61*(1), 45–54. <https://doi.org/10.5860/crl.61.1.45>
- Pintrich, P. R. (2000). The Role of Goal Orientation in Self-Regulated Learning. In *Handbook of Self-Regulation* (pp. 451–502). <https://doi.org/10.1016/b978-012109890-2/50043-3>
- Przepiórka, A., Błachnio, A., & Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiology International, 36*(8), 1025–1035. <https://doi.org/10.1080/07420528.2019.1607370>
- Qiuzhu, C. (2016). Study on the Relationship between Academic Procrastination and Academic Self-efficacy of Junior Middle School Students. *Journal of East China Normal University (Educational ...)*, 35, 146–152. <https://xbjk.ecnu.edu.cn/EN/abstract/abstract8981.shtml>
- Rahman, I. K. (2020). The development of e-counseling gestalt prophetic to help students cope with academic procrastination in Indonesian Islamic higher education. *Islamic Guidance and Counseling Journal, 3*(1), 46–53. <https://doi.org/10.25217/igcj.v3i1.614>
- Ren, Z. (2006). A cross-cultural study of epistemological beliefs and moral reasoning between American and Chinese college students. In *ProQuest Dissertations and Theses* (pp. 182-182 p.). [Google Scholar](https://scholar.google.com/)
- Rosman, T., Peter, J., Mayer, A. K., & Krampen, G. (2018). Conceptions of scientific knowledge influence learning of academic skills: epistemic beliefs and the efficacy of information literacy instruction. *Studies in Higher Education, 43*(1), 96–113. <https://doi.org/10.1080/03075079.2016.1156666>
- Schommer-Aikins, M. (2004). Explaining the Epistemological Belief System: Introducing the Embedded Systemic Model and Coordinated Research Approach. *Educational Psychologist, 39*(1), 19–29. https://doi.org/10.1207/s15326985ep3901_3
- Schommer, M. (1990). Effects of Beliefs About the Nature of Knowledge on Comprehension. *Journal of Educational Psychology, 82*(3), 498–504. <https://doi.org/10.1037/0022->

0663.82.3.498

- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, *33*(1), 135–145. <https://doi.org/10.1002/ejsp.144>
- Senécal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *Journal of Social Psychology*, *135*(5), 607–619. <https://doi.org/10.1080/00224545.1995.9712234>
- Sheehy, K., Budiyanto, Kaye, H., & Rofiah, K. (2019). Indonesian teachers' epistemological beliefs and inclusive education. *Journal of Intellectual Disabilities*, *23*(1), 39–56. <https://doi.org/10.1177/1744629517717613>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, *31*(4), 503–509. <https://doi.org/10.1037/0022-0167.31.4.503>
- Stead, R., Shanahan, M. J., & Neufeld, R. W. J. (2010). “I’ll go to therapy, eventually”: Procrastination, stress and mental health. *Personality and Individual Differences*, *49*(3), 175–180. <https://doi.org/10.1016/j.paid.2010.03.028>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65–94. <https://doi.org/10.1037/0033-2909.133.1.65>
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How Study Environments Foster Academic Procrastination: Overview and Recommendations. *Frontiers in Psychology*, *11*(540910). <https://doi.org/10.3389/fpsyg.2020.540910>
- Syapira, S. A., Budiman, B., & Selamat, M. N. (2022). Self-Efficacy and Self-Regulation With Academic Procrastination in Muslim Adolescents During the Online Learning Period. *Psikis: Jurnal Psikologi Islami*, *8*(1), 88–101. <https://doi.org/10.19109/psikis.v8i1.11894>
- Unda-López, A., Osejo-Taco, G., Vinueza-Cabezas, A., Paz, C., & Hidalgo-Andrade, P. (2022). Procrastination during the COVID-19 Pandemic: A Scoping Review. *Behavioral Sciences*, *12*(2), 38. <https://doi.org/10.3390/bs12020038>
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, *35*(6), 1401–1418. [https://doi.org/10.1016/S0191-8869\(02\)00358-6](https://doi.org/10.1016/S0191-8869(02)00358-6)
- van Eerde, W., & Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: The moderating role of trait self-control. *Frontiers in Psychology*, *9*(NOV). <https://doi.org/10.3389/fpsyg.2018.02029>
- Winberg, T. M., Hofverberg, A., & Lindfors, M. (2019). Relationships between epistemic beliefs and achievement goals: developmental trends over grades 5–11. *European Journal of Psychology of Education*, *34*(2), 295–315. <https://doi.org/10.1007/s10212-018-0391-z>
- Xenofontos, C. (2018). Greek-Cypriot elementary teachers' epistemological beliefs about mathematics. *Teaching and Teacher Education*, *70*, 47–57. <https://doi.org/10.1016/j.tate.2017.11.007>
- Zhang, C. H., Si, J. W., & Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol*, *26*, 106–109. [Google Scholar](#)
- Ziegler, N., & Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learning and Individual Differences*, *64*, 71–82. <https://doi.org/10.1016/j.lindif.2018.04.009>
- Zimmerman, B. J., & Martinez-Pons, M. (1990). Student Differences in Self-Regulated

Learning: Relating Grade, Sex, and Giftedness to Self-Efficacy and Strategy Use.
Journal of Educational Psychology, 82(1), 51–59. <https://doi.org/10.1037/0022-0663.82.1.51>

Copyright holder :

© Ghufron, M. N., & Suminta, R. R.

First publication right :

Islamic Guidance and Counseling Journal

This article is licensed under:

CC-BY-SA

The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

 M. Nur Ghufron¹,  Rini Risnawita Suminta²

¹Institut Agama Islam Negeri Kudus, Indonesia

²Institut Agama Islam Negeri Kediri, Indonesia

 nurghufron78@gmail.com

Article Information:

Received April 30, 2022

Revised August 24, 2022

Accepted August 27, 2022

Keywords: academic procrastination; belief about knowledge; belief about learning; self-regulation in learning

Abstract

The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of believe about knowledge, believe about learning and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are four types of scales used in the data collection process: the scale of believe about knowledge, the scale believe about learning, the scale of self-regulation in learning and the scale of academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge has an effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), belief about knowledge affects academic procrastination ($r = -0,157$, $p = 0.000$), belief about learning affects self-regulation in learning ($r = 0.199$, $p = 0,040$), belief about learning affects academic procrastination ($r = -0.147$, $p = 0,019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -0.097$, $p = 0,030$).

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Hailikari et al., 2021). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Liu et al., 2020; Qiuzhu, 2016), affective states including shame and guilt (Oflazian & Borders, 2022), one's characteristics such as dependence (Johnson et al., 2000), locus of control includes intrinsic and extrinsic motivation (Batubara, 2017; Carden et al., 2004), control system (Mao et al., 2022; van Eerde & Venus, 2018), role conflict (Senécal et al., 2003), social activities (Jackson et al., 2003), personality roles (Lee et al., 2006), situational characteristics and traits (Hockey, 1983), and self-regulation (Steel, 2007; Syapira et al., 2022; Ziegler & Opdenakker, 2018).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it

How to cite:

Ghufron, M. N., & Suminta, R. R. (2022). The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of Muslim College Students. *Islamic Guidance and Counseling Journal*, 5(2). <https://doi.org/10.25217/igcj.v5i2.2700>

E-ISSN:

2614-1566

Published by:

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung

seems that in an achievement-oriented society in which people are faced with major changes and are required to pursue the latest advances, procrastination can become an important problem (Rahman, 2020; van Eerde, 2003). It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Eisenbeck et al., 2019), 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis & Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Eisenbeck et al., 2019), while Milgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Steel (2007) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile Alblwi et al. (2020) that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (2004; 1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

Epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known (Ren, 2006). The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer, 2001).

According to Schommer (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in

keeping truth and error, have absolute views, and believe that truth can be known from the teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research (Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2001).

Schommer (1990) stated that epistemological beliefs require what students believe about the nature of knowledge and believe about learning. Belief about knowledge consists of three dimensions. First, knowledge comes from authorities or experts such as teachers, lecturers or reference books, compared to logic and thought. Second, knowledge is definite, absolute, unchanging, and not tentative. Third, a regular process. Jehng et al. (1993) explain that the dimension of the regular process, or what is called rigid learning, is a dimension of belief whether learning is a process that is passively accepted by individuals, or the process of formulating the fact that individuals independently develop their ideas. Furthermore, the belief about learning consists of two dimensions. First, quick learning. Second, innate ability. Innate ability is a level of belief that the ability to learn is innate, rather than acquired through learning (Jehng et al., 1993).

In the procrastination literature, Zarrinet et al. (2020) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Svardal et al., 2020). Interpretively, this condition may be a natural result of underdeveloped epistemological belief (Baytelman et al., 2020; Merk et al., 2018; Rosman et al., 2018).

The procrastination appears to be a chronic academic pattern (J. R. Ferrari et al., 1992, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2012), sleep quality (Przepiórka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh & Roy, 2017; Ziegler & Opdenakker, 2018), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency, lower academic self-esteem, and academic stress (Flett et al., 2016). Academic procrastination may increase from one year to the next in college (Bozgun & Baytemir, 2021). Steel (2007) stated that procrastination is detrimental to academic performance leading to lower grades and failure. Ziegler & Opdenakker (2018) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2001; 2004) suggested that understanding the barriers to the

change and growth of the epistemological belief will be important for students. Since procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief require what students believe about the nature of knowledge and believe about learning (Sheehy et al., 2019; Winberg et al., 2019; Xenofontos, 2018), self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (2010) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. if monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer et al., 2008). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation (Steel, 2007; Syapira et al., 2022) particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time .

Rationale of the Current Study

Cases of student academic procrastination have increased dramatically. This case occurs, especially in Islamic universities (Rahman, 2020). Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent

academic procrastination, it will certainly be a problem for them, and can also be considered as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief require what students believe about the nature of knowledge and believe about learning and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent.

Hypotheses

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling with the reasons as stated by Hadi (1984) that the election of a group of subjects based on certain characteristics or traits that considered to have a close relationship with the characteristics or characteristics previously known population which the steps to take the subject as a sample are carried out by, first, determining where students come from the Islamic Guidance and Counseling study program. Second, students who have taken thesis and third are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Research Instruments

Four different scales were used in the data collection process. The scale is prepared based on the sumated rating method consisting of the five levels of assessment. The magnitude of the value ranges from 0 to 4. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The belief about the nature of knowledge

The belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes following aspects (1) authority/expert knowledge that it derives from people who know more/an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8.

Table 1. Participant characteristics (N=277)

Variable	Percentage (n)
Gender	
Woman	61.7 (171)
Man	38.3 (106)
Age	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
Range of work for the current semester	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

Examples of items are; *“I like the class where the teacher before teaching determines the unit of learning program”*, *“The answers in the reference book are very helpful because I am not sure of my own solutions”* and *“I feel comfortable when dealing with uncertain learning conditions”*.

The Belief About Learning

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng et al. (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *“If I can't understand something quickly, I usually have difficulty in learning it as a whole”* and *“Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students.”*.

Self-regulation

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *“If I plan something, I'm pretty sure I can carry it out.”* The metacognition dimension consists of 9 items, examples of which are; *“To produce a good work, I determine every step in the preparation”*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *“The biggest problem for me is hard to begin my ta”*.

Academic procrastination

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; *“In preparing the lecture task which has deadline, I often waste the time by doing others”* and *“I always say I will do it tomorrow”*.

Table 2. Results of validity and reliability of research instruments

Variable	Standardized loading	Cronbach a
Belief about Knowledge		0,853
Certain Knowledge	0,805	
Omniscient	0,824	
Simple Knowledge	0,755	
Belief about Learning		0,843
Innate ability	0,773	
Quick learning	0,826	
Self Regulation		0,871
Motivation	0,833	
Metacognition	0,918	
Behavior	0,733	
Academic Procrastination		0,869
Delay in starting to complete the performance	0,912	
Slowness in doing the task	0,889	
Time gap between the plan and the actual performance	0,726	
Tendency to do other activities	0,566	

Table 3. Description of research data

Variable	N	Min	Max	M	SD
Belief about knowledge	277	0	32	21,17	6,949
Belief about learning	277	0	12	7,98	2,475
Self-regulation	277	0	120	67,77	27,362
Academic Procrastination	277	10	116	82,54	20,669

Table 4. The Result of Causality Test Regression Weight

Variables	Estimate	SE	CR	P
Belief about knowledge → self-regulation in learning	0,157	0,071	2,203	0,028
Belief about knowledge → academic procrastination	-0,157	0,047	-3,314	0,000
Belief about learning → self-regulation in learning	0,199	0,097	2,053	0,040
Belief about learning → academic procrastination	-0,147	0,063	-2	0,019
Self-regulation in learning → academic procrastination	-0,097	0,045	-2	0,030

Validity test

Validity test is done through unidimensionality test on each construct with confirmatory factor analysis. Based on the results of confirmatory analysis, it is found that the fit criteria value has been achieved well. The reliability Alpha Cronbach calculation result of the belief about knowledge gets 0.853, while belief about learning gets 0.843, self-regulation in learning reliability is 0.871, and academic procrastination reliability is 0.869. Thus, all variables get quite good reliability above 0.70, so it can be stated that all used variables have met the reliability requirements. A summary of the validity and reliability test results of each research instrument can be seen in table 2.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the Analysis of Moment Structures (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 3. Based on table

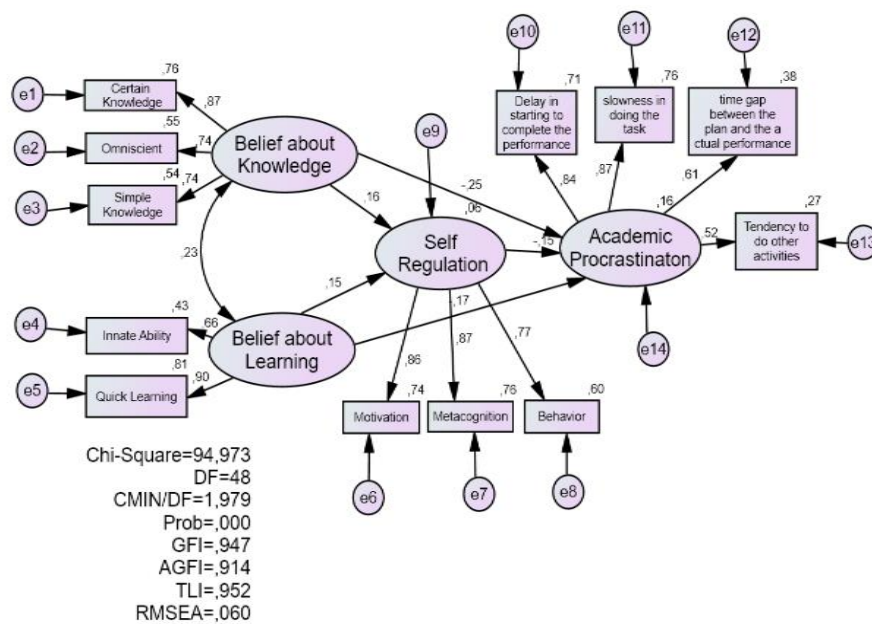


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

2, it is known that the belief about knowledge variable has an empirical score of 21.17, with a standard deviation of 6.949, the belief about learning variable has an empirical score of 7.98, with a standard deviation of 2.475, the variable of self-regulation in learning has an empirical mean score of 67.77, with a standard deviation of 27.362, and the academic procrastination variable has an empirical mean score of 82.54 with a standard deviation of 20.669.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above 0.05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, $p = 0.000$), CMIN/DF = 1.860, GFI = 0.920, AGFI = 0.870, TLI = 0.944 and RMSEA = 0.070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below 0.005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of 0.05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 4.

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = 0.157$, $p = 0.028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -0.157$, $p = 0.000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = 0.199$, $p = 0.040$). The variable of belief about learning has a significant negative effect on academic procrastination ($r = -0.147$, $p = 0.019$), the variable of

self-regulation in learning also has a significant negative effect on academic procrastination ($r = -0.097, p = 0.030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Abdi Zarrin et al., 2020; Steel, 2007; Unda-López et al., 2022). Fear of failure associated with self-efficacy (J. R. Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (J. R. Ferrari et al., 1995; Hess et al., 2000; Sénécal et al., 1995; Solomon & Rothblum, 1984) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (authority or expert knowledge) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1992) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill,

time, and effort problems of more or lack of independent learning (Ghosh & Roy, 2017; Hailikari et al., 2021; Hong et al., 2021).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et al., 1993; Schommer-Aikins, 2004).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model. This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Syapira et al., 2022; Ziegler & Opendakker, 2018).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through

experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integrately. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

ACKNOWLEDGEMENT

Please make a paragraph of acknowledgement.

AUTHOR CONTRIBUTION STATEMENT

Please make a paragraph of author contribution statement. See our published content for example.

REFERENCES

- Abdi Zarrin, S., Gracia, E., & Paixão, M. P. (2020). Prediction of academic procrastination by fear of failure and self-regulation. *Educational Sciences: Theory and Practice*, 20(3), 34–43. <https://doi.org/10.12738/jestp.2020.3.003>
- Alblwi, A., McAlaney, J., Altuwairiqi, M., Stefanidis, A., Phalp, K., & Ali, R. (2020). Procrastination on Social Networks: Triggers and Countermeasures*. *Psihologija*, 53(4), 393–410. <https://doi.org/10.2298/PSI190902016A>
- Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relationship with demographics and individual preferences. *Journal of Theory and Practice in Education*, 5(1), 18–32. <http://eku.comu.edu.tr/article/view/1044000004>
- Bandura, A. (2010). Self-Efficacy. In *The Corsini Encyclopedia of Psychology* (pp. 1–3). American Cancer Society. <https://doi.org/10.1002/9780470479216.corpsy0836>
- Batubara, J. (2017). The Contribution of Locus of Control to Academic Procrastination in Islamic Education Management Students in Indonesia. *Al-Ta Lim Journal*, 24(1), 29–36. <https://doi.org/10.15548/jt.v24i1.260>
- Baytelman, A., Iordanou, K., & Constantinou, C. P. (2020). Epistemic beliefs and prior knowledge as predictors of the construction of different types of arguments on socioscientific issues. *Journal of Research in Science Teaching*, 57(8), 1199–1227. <https://doi.org/10.1002/tea.21627>
- Bozgun, K., & Baytemir, K. (2021). Academic Self Efficacy and Dispositional Hope as Predictors of Academic Procrastination: The Mediating Effect of Academic Intrinsic Motivation. *Participatory Educational Research*, 9(3), 296–314. <https://doi.org/10.17275/per.22.67.9.3>
- Garden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95(2), 581–582. <https://doi.org/10.2466/pr0.95.2.581-582>

- Eisenbeck, N., Carreno, D. F., & Uclés-Juárez, R. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, *13*, 103–108. <https://doi.org/10.1016/j.jcbs.2019.07.007>
- Ferrari, J. (2017). *Are you a procrastinator? Here's how you're helping online scammers*. Guardian. [Google Scholar](#)
- Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). Procrastination and Task Avoidance. *Procrastination and Task Avoidance*. <https://doi.org/10.1007/978-1-4899-0227-6>
- Ferrari, J. R., Parker, J. T., & Ware, C. B. (1992). Academic procrastination: Personality correlates with Myers-Briggs types, self-efficacy, and academic locus of control. *Journal of Social Behavior and Personality*, *7*(3), 495–502. [Google Scholar](#)
- Flett, A. L., Haghbin, M., & Pychyl, T. A. (2016). Procrastination and Depression from a Cognitive Perspective: An Exploration of the Associations Among Procrastinatory Automatic Thoughts, Rumination, and Mindfulness. *Journal of Rational - Emotive and Cognitive - Behavior Therapy*, *34*(3), 169–186. <https://doi.org/10.1007/s10942-016-0235-1>
- Ghosh, R., & Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students: Is there any gender divide? *Gender in Management*, *32*(8), 518–534. <https://doi.org/10.1108/GM-01-2017-0011>
- Gueorguieva, J. M. (2012). Procrastination a measurement of types. In *Dissertation Abstracts International Section A: Humanities and Social Sciences* (Vol. 72, Issues 11-A, p. 4006). [Google Scholar](#)
- Hadi, S. (1984). *Metodologi Research 2* (Vol. 2). Penerbit Andi.
- Hailikari, T., Katajavuori, N., & Asikainen, H. (2021). Understanding procrastination: A case of a study skills course. *Social Psychology of Education*, *24*(2), 589–606. <https://doi.org/10.1007/s11218-021-09621-2>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness Predicts Academic Procrastination: The Mediating Role of Neuroticism. *Journal of Social Behavior and Personality*, *15*(5), 61–74. [Google Scholar](#)
- Hockey, G. R. J. (1983). Current Issues and new directions. *Stress and Fatigue in Human Performance*, *15*(5), 363–373. [Google Scholar](#)
- Hofer, B K. (2001). Personal Epistemology. In B K Hofer & P. R. Pintrich (Eds.), *Personal Epistemology* (pp. 3–14). Lawrence Erlbaum Associates. <https://doi.org/10.4324/9781410604316>
- Hofer, Barbara K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, *39*(1), 1–3. https://doi.org/10.1207/s15326985ep3901_1
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, *174*(7). <https://doi.org/10.1016/j.paid.2021.110673>
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of midwestern college students. *Education*, *124*(2), 310–320. [Google Scholar](#)
- Jehng, J. C. J., Johnson, S. D., & Anderson, R. C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, *18*(1), 23–35. <https://doi.org/10.1006/ceps.1993.1004>
- Johnson, E. M., Green, K. E., & Kluever, R. C. (2000). Psychometric characteristics of the revised procrastination inventory. *Research in Higher Education*, *41*(2), 269–279. <https://doi.org/10.1023/A:1007051423054>
- Kanfer, R., Chen, G., & Pritchard, R. (2008). *Work motivation: Past, present and future*. [Google Scholar](#)

- Klingsieck, K. B. (2013). Procrastination when good things don't come to those who wait. *European Psychologist, 18*(1), 24–34. <https://doi.org/10.1027/1016-9040/a000138>
- Lee, D. Gwi, Kelly, K. R., & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences, 40*(1), 27–37. <https://doi.org/10.1016/j.paid.2005.05.010>
- Liu, G., Cheng, G., Hu, J., Pan, Y., & Zhao, S. (2020). Academic Self-Efficacy and Postgraduate Procrastination: A Moderated Mediation Model. *Frontiers in Psychology, 11*(1752). <https://doi.org/10.3389/fpsyg.2020.01752>
- Mao, B., Chen, S., Wei, M., Luo, Y., & Liu, Y. (2022). Future Time Perspective and Bedtime Procrastination: The Mediating Role of Dual-Mode Self-Control and Problematic Smartphone Use. *International Journal of Environmental Research and Public Health, 19*(16), 10334. <https://doi.org/10.3390/ijerph191610334>
- Merk, S., Rosman, T., Muis, K. R., Kelava, A., & Bohl, T. (2018). Topic specific epistemic beliefs: Extending the Theory of Integrated Domains in Personal Epistemology. *Learning and Instruction, 56*, 84–97. <https://doi.org/10.1016/j.learninstruc.2018.04.008>
- Milgram, N. (1991). *Procrastination: Encyclopedia of Human Biology*. Academic Press.
- Oflazian, J. S., & Borders, A. (2022). Does Rumination Mediate the Unique Effects of Shame and Guilt on Procrastination? *Journal of Rational - Emotive and Cognitive - Behavior Therapy. https://doi.org/10.1007/s10942-022-00466-y*
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education, 29*(1), 3–19. <https://doi.org/10.1080/0260293042000160384>
- Onwuegbuzie, A. J., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries, 61*(1), 45–54. <https://doi.org/10.5860/crl.61.1.45>
- Pintrich, P. R. (2000). The Role of Goal Orientation in Self-Regulated Learning. In *Handbook of Self-Regulation* (pp. 451–502). <https://doi.org/10.1016/b978-012109890-2/50043-3>
- Przepiórka, A., Błachnio, A., & Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiology International, 36*(8), 1025–1035. <https://doi.org/10.1080/07420528.2019.1607370>
- Qiuzhu, C. (2016). Study on the Relationship between Academic Procrastination and Academic Self-efficacy of Junior Middle School Students. *Journal of East China Normal University (Educational ...)*, 35, 146–152. <https://xbjk.ecnu.edu.cn/EN/abstract/abstract8981.shtml>
- Rahman, I. K. (2020). The development of e-counseling gestalt prophetic to help students cope with academic procrastination in Indonesian Islamic higher education. *Islamic Guidance and Counseling Journal, 3*(1), 46–53. <https://doi.org/10.25217/igcj.v3i1.614>
- Ren, Z. (2006). A cross-cultural study of epistemological beliefs and moral reasoning between American and Chinese college students. In *ProQuest Dissertations and Theses* (pp. 182-182 p.). [Google Scholar](https://scholar.google.com/)
- Rosman, T., Peter, J., Mayer, A. K., & Krampen, G. (2018). Conceptions of scientific knowledge influence learning of academic skills: epistemic beliefs and the efficacy of information literacy instruction. *Studies in Higher Education, 43*(1), 96–113. <https://doi.org/10.1080/03075079.2016.1156666>
- Schommer-Aikins, M. (2004). Explaining the Epistemological Belief System: Introducing the Embedded Systemic Model and Coordinated Research Approach. *Educational Psychologist, 39*(1), 19–29. https://doi.org/10.1207/s15326985ep3901_3
- Schommer, M. (1990). Effects of Beliefs About the Nature of Knowledge on Comprehension. *Journal of Educational Psychology, 82*(3), 498–504. <https://doi.org/10.1037/0022->

0663.82.3.498

- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, *33*(1), 135–145. <https://doi.org/10.1002/ejsp.144>
- Senécal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *Journal of Social Psychology*, *135*(5), 607–619. <https://doi.org/10.1080/00224545.1995.9712234>
- Sheehy, K., Budiyo, Kaye, H., & Rofiah, K. (2019). Indonesian teachers' epistemological beliefs and inclusive education. *Journal of Intellectual Disabilities*, *23*(1), 39–56. <https://doi.org/10.1177/1744629517717613>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, *31*(4), 503–509. <https://doi.org/10.1037/0022-0167.31.4.503>
- Stead, R., Shanahan, M. J., & Neufeld, R. W. J. (2010). “I’ll go to therapy, eventually”: Procrastination, stress and mental health. *Personality and Individual Differences*, *49*(3), 175–180. <https://doi.org/10.1016/j.paid.2010.03.028>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65–94. <https://doi.org/10.1037/0033-2909.133.1.65>
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How Study Environments Foster Academic Procrastination: Overview and Recommendations. *Frontiers in Psychology*, *11*(540910). <https://doi.org/10.3389/fpsyg.2020.540910>
- Syapira, S. A., Budiman, B., & Selamat, M. N. (2022). Self-Efficacy and Self-Regulation With Academic Procrastination in Muslim Adolescents During the Online Learning Period. *Psikis: Jurnal Psikologi Islami*, *8*(1), 88–101. <https://doi.org/10.19109/psikis.v8i1.11894>
- Unda-López, A., Osejo-Taco, G., Vinuesa-Cabezas, A., Paz, C., & Hidalgo-Andrade, P. (2022). Procrastination during the COVID-19 Pandemic: A Scoping Review. *Behavioral Sciences*, *12*(2), 38. <https://doi.org/10.3390/bs12020038>
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, *35*(6), 1401–1418. [https://doi.org/10.1016/S0191-8869\(02\)00358-6](https://doi.org/10.1016/S0191-8869(02)00358-6)
- van Eerde, W., & Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: The moderating role of trait self-control. *Frontiers in Psychology*, *9*(NOV). <https://doi.org/10.3389/fpsyg.2018.02029>
- Winberg, T. M., Hofverberg, A., & Lindfors, M. (2019). Relationships between epistemic beliefs and achievement goals: developmental trends over grades 5–11. *European Journal of Psychology of Education*, *34*(2), 295–315. <https://doi.org/10.1007/s10212-018-0391-z>
- Xenofontos, C. (2018). Greek-Cypriot elementary teachers' epistemological beliefs about mathematics. *Teaching and Teacher Education*, *70*, 47–57. <https://doi.org/10.1016/j.tate.2017.11.007>
- Zhang, C. H., Si, J. W., & Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol*, *26*, 106–109. [Google Scholar](#)
- Ziegler, N., & Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation, self-efficacy, and effort regulation. *Learning and Individual Differences*, *64*, 71–82. <https://doi.org/10.1016/j.lindif.2018.04.009>
- Zimmerman, B. J., & Martinez-Pons, M. (1990). Student Differences in Self-Regulated

Learning: Relating Grade, Sex, and Giftedness to Self-Efficacy and Strategy Use.
Journal of Educational Psychology, 82(1), 51–59. <https://doi.org/10.1037/0022-0663.82.1.51>

Copyright holder :

© Ghufron, M. N., & Suminta, R. R.

First publication right :

Islamic Guidance and Counseling Journal

This article is licensed under:

CC-BY-SA

Proofs Invitation



Participants

Aprezo Pardodi Maba (aprezopm)

M. Nur Ghufron (ghufron)

Assistant Editor (aeditor)

Messages

Note

From

Dear Dr. Ghufron,

aeditor

2022-10-22

I would like to invite you to final proof of your manuscript.
Proof corrections should be limited to typographical errors
and should be returned within **two** days.

02:45 PM

Thank you very much indeed for your cooperation. We
send you our very best regards. :)

 [Proof+Form.doc](#)

 [104-118 Dr. Ghufron.pdf](#)

[Add Message](#)

Proofs Invitation





Participants

Aprezo Pardodi Maba (aprezopm)

M. Nur Ghufron (ghufron)

Assistant Editor (aeditor)

Messages

Note	From
<p>Dear Dr. Ghufron,</p> <p>I would like to invite you to final proof of your manuscript. Proof corrections should be limited to typographical errors and should be returned within two days.</p> <p>Thank you very much indeed for your cooperation. We send you our very best regards. :)</p>	<p>aeditor 2022-10-22 02:45 PM</p>
<p> Proof+Form.doc</p> <p> 104-118 Dr. Ghufron.pdf</p>	

[Add Message](#)

[IGCJ] A message regarding Islamic Guidance and Counseling Journal



(Submission Portal - New!)

Participants

Aprezo Pardodi Maba (aprezopm)

M. Nur Ghufron (ghufron)

Messages

Note

From

Dear Dr. Ghufron,

aprezopm

Congratulations!

2022-10-30

06:57 PM

Your manuscript has been published:

<https://journal.iaimnumetrolampung.ac.id/index.php/igcj/article/view/2700>

Please share this with all of your colleagues and students. I believe your work has advanced science and knowledge.

I wish you all the best in the world, and I can't wait to work with you again.

Aprezo Pardodi Maba
Editor in Chief

Editorial Team of [Islamic Guidance and Counseling Journal](#)

Listed in [Scopus \(Q2\)](#), [Scimago JR \(0.170\)](#) & [DOAJ Seal](#)

Accredited [Sinta Rank 1](#) by Ministry of Education and Culture of Republic of Indonesia

[Add Message](#)

The Role of Epistemological Belief and Self Regulation in Academic Procrastination of Muslim College Students

 M. Nur Ghufron¹,  Rini Risnawita Suminta²

¹Institut Agama Islam Negeri Kudus, Indonesia

²Institut Agama Islam Negeri Kediri, Indonesia

 emnurghufron78@iainkudus.ac.id

Article Information:

Received April 21, 2022

Revised August 27, 2022

Accepted September 24, 2022

Keywords: academic procrastination; belief about knowledge; belief about learning; self-regulation in learning

Abstract

The study on academic procrastination can help educators and educational developers in avoiding the lack of success and even failure in the educational process. This study aims to examine the effect of belief about knowledge, belief about learning, and self-regulation in learning on academic procrastination. This quantitative study involves 277 college students. The data collection technique used in this study is a questionnaire in the form of a scale. There are four types of scales used in the data collection process; the scale of belief about knowledge, belief about learning, self-regulation in learning, and academic procrastination. Data analysis technique using structural equation technique. The results show that belief about knowledge affects self-regulation in learning ($r = .157, p = .028$), belief about knowledge affects academic procrastination ($r = -.157, p = .000$), belief about learning affects self-regulation in learning ($r = .199, p = .040$), belief about learning affects academic procrastination ($r = -.147, p = .019$), and self-regulation in learning affects significant negatively to academic procrastination ($r = -.097, p = .030$).

INTRODUCTION

Understanding why people who generally have the best effort for completing academic assignments and professional assignments fail to complete them on time has been an eternal focus of research in psychology, education, and procrastination (Hailikari et al., 2021). The uncertainty regarding procrastination has resulted in various studies due to low psychological factors such as self-efficacy (Liu et al., 2020; Qiuzhu, 2016), affective states including shame and guilt (Oflazian & Borders, 2022), one's characteristics such as dependence (Johnson et al., 2000), locus of control includes intrinsic and extrinsic motivation (Batubara, 2017; Carden et al., 2004), control system (Mao et al., 2022; van Eerde & Venus, 2018), role conflict (Senécal et al., 2003), social activities (Jackson et al., 2003), personality roles (Lee et al., 2006), situational characteristics and traits (Hockey, 1983), and self-regulation (Steel, 2007; Syapira et al., 2022; Ziegler & Opdenakker, 2018).

Steel (2007) noted that procrastination is a common phenomenon and some people have made it as a way of life. Ferrari (2017) emphasized, 20% of men and women are clinical procrastinators, at school, home, work, and in relationships. Although often considered as a minor problem, clinical procrastination is not a bad time management problem. Thus, it can be concluded that procrastination is quite widespread, and sometimes ends with a level of depression or psychological disorders. Whether it is a serious psychological disorder or not, it seems that in an achievement-oriented society in which people are faced with major changes

How to cite:

Ghufron, M. N., & Suminta, R. R. (2022). The Role of Epsitemological Belief and Self Regulation in Academic Procrastination of Muslim College Students. *Islamic Guidance and Counseling Journal*, 5(2). <https://doi.org/10.25217/igcj.v5i2.2700>

E-ISSN:

2614-1566

Published by:

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung

and are required to pursue the latest advances, procrastination can become an important problem (Rahman, 2020; van Eerde, 2003). It is assumed that a number of college students (80-85%) of various levels are involved in procrastination (Eisenbeck et al., 2019), 60% of students procrastinate doing their assignments (Onwuegbuzie & Jiao, 2000); 40% to 60% of students report that they almost always procrastinate writing papers, preparing for exams, and completing weekly reading assignments (Onwuegbuzie, 2004). Balkis & Duru (2009), also reported that 23% of students procrastinate their academic assignments.

A delay is said to be procrastination, if it is carried out on an important task, done repeatedly intentionally and causes feelings of discomfort, subjectively felt by a procrastinator (Eisenbeck et al., 2019), while Milgram (1991) said that procrastination is a specific behavior which includes: (1) a behavior which involves an element of procrastination, either to start or complete a task or activity, (2) produces other further effects, such as lateness in completing tasks or failure to do tasks, (3) involves a task perceived by procrastinators as an important task to do, for example office work, school work, or chores, (4) produces unpleasant emotional states, such as feelings of anxiety, guilt, anger, panic, and so on.

Historically, procrastination research has focused on cognitive behavioral factors from a motivational perspective. For example, Steel (2007) reported that there are differences in academic motivation and learning habits in underachieving and high-achieving students. High-achieving students tend to delay doing tasks which are considered difficult and prone to bother enjoying activities such as engaging in social activity opportunities. Underachieving students share the same talents as high-achieving students, high-achieving students differ in attitude and tend to need external pressure to fulfill assignments. It can be emphasized that procrastination is predominantly a cognitive-behavioral problem as opposed to a lack of learning habits. Meanwhile Alblwi et al. (2020) that the procrastination factor due to the fear of failure and reluctance to do the task became the most counted portion. Both factors correlate with mental health and interpersonal factors.

The past 30 years of research on academic procrastination and other forms of procrastination have been examined from various perspectives. The exploration of procrastination associated with metacognitive perspectives, mental health, motivation and self-regulation in learning has received potential explanations and various results. Based on a variety of potential explanations for procrastination, it is proved that there is not much to be explored. The relationship between college students' epistemological belief and academic procrastination do not seem to have been studied much and is assumed to be able to reveal a deeper understanding of the factors associated with unproductive academic achievement. According to Schommer (2004; 1990) about the importance of epistemological belief on learning process which is assumed to be able to explain psychological dynamics of problematic academic phenomenon.

Epistemology is a branch of philosophy which investigates the authenticity of definition, structure, method, and knowledge validity. The traditional philosophy of personally epistemological paradigm emphasizes the relationship between the perceiver or the knower and what is felt and can be known (Ren, 2006). The study of epistemology is originally a part of philosophy which discusses philosophical problems about the theory of science. However, the study of epistemology has also recently become an interesting problem to be studied by psychologists in empirical research (Hofer, 2001).

According to Schommer (2004), Perry's research with Harvard Scholars in the late 1960s was an important result which related empirically to personal epistemological belief. Perry's research results determined that the college students have complex knowledge, interactive relationships with knowledge and processes in which knowledge is accepted and conducted or rejected. Starting from the first level, the college students are dualistic in keeping truth and error, have absolute views, and believe that truth can be known from the

teacher's communication role. This first-year student believes that simple knowledge and unchanging facts are taught by people who know better. As time goes by, students become more knowledgeable and more realistic in believing knowledge which is complex and tentative from the results of thoughts and empirical events. Perry hypothesized eight developmental positions and classified them into four categories which belong to the dualistic thinking of students in the early stages to relativist thinkers by the end of the fourth year of research (Ren, 2006).

The results of Perry's research, for example, found that the students changed their belief about knowledge in several phases, namely: from simple, permanent and unchanging knowledge, obtained from authority, to the belief in more complex and changing knowledge (tentative), obtained from thought processes, empirical events, and enriched by the time movement to be more mature. More than 30 years, research on the epistemological belief has attempted to ensure aspects of the relationship between the knower and what can be known about knowledge in an academic setting.

The epistemological belief related to how people's beliefs about how knowledge occurs, how much knowledge is acquired, where it is obtained, and how knowledge is constructed and evaluated. Furthermore, the focus of personal epistemological research is how individuals construct knowledge concepts and how to know which concepts are then used in developing an understanding of the world (Hofer, 2001).

Schommer (1990) stated that epistemological beliefs require what students believe about the nature of knowledge and believe about learning. Belief about knowledge consists of three dimensions. First, knowledge comes from authorities or experts such as teachers, lecturers or reference books, compared to logic and thought. Second, knowledge is definite, absolute, unchanging, and not tentative. Third, a regular process. Jehng et al. (1993) explain that the dimension of the regular process, or what is called rigid learning, is a dimension of belief whether learning is a process that is passively accepted by individuals, or the process of formulating the fact that individuals independently develop their ideas. Furthermore, the belief about learning consists of two dimensions. First, quick learning. Second, innate ability. Innate ability is a level of belief that the ability to learn is innate, rather than acquired through learning (Jehng et al., 1993).

In the procrastination literature, Zarrinet et al. (2020) considered fear of failure as an important factor in academic procrastination. The college students who choose to avoid carrying out assignments are less likely to have positive experiences during the learning process and are more likely to experience many negative psychological things (Svardal et al., 2020). Interpretively, this condition may be a natural result of underdeveloped epistemological belief (Baytelman et al., 2020; Merk et al., 2018; Rosman et al., 2018).

The procrastination appears to be a chronic academic pattern (J. R. Ferrari et al., 1992, 1995). It can have negative effects on emotions, academic achievement (Stead et al., 2010), social achievement, subjective well-being (Gueorguieva, 2012), sleep quality (Przepiórka et al., 2019), and even physical health (Klingsieck, 2013). Academic procrastination is a specific type of procrastination, a manifestation of learning delays (Zhang et al., 2010). It is commonly seen among secondary school, high school, and college students (Ghosh & Roy, 2017; Ziegler & Opdenakker, 2018), and produces many bad effects such as negative emotions, anxiety and depression, poor learning efficiency, lower academic self-esteem, and academic stress (Flett et al., 2016). Academic procrastination may increase from one year to the next in college (Bozgun & Baytemir, 2021). Steel (2007) stated that procrastination is detrimental to academic performance leading to lower grades and failure. Ziegler & Opdenakker (2018) linked academic procrastination to an increased health risk. Regarding the belief on knowledge, Hofer (2001; 2004) suggested that understanding the barriers to the change and growth of the epistemological belief will be important for students. Since

procrastination continues into adulthood, understanding the relationship between epistemological belief and procrastination at the college level is very useful for understanding procrastination at the professional level.

In addition to the epistemological belief require what students believe about the nature of knowledge and believe about learning (Sheehy et al., 2019; Winberg et al., 2019; Xenofontos, 2018), self-regulation is one of the important concepts in social cognitive theory which bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, emotions, and behavior. Self-regulation is one of the important concepts in social cognitive theory. Bandura (2010) said that the self-regulation system bridges external influences with the capabilities or capital possessed by humans, as the basis for carrying out purposeful behavior, thus enabling humans to have individual control over their thoughts, feelings, motivations, and behavior. Based on this definition, self-regulation has an important role in human behavior. It can be interpreted as self-direction or self-control in acting. Self-regulated learning can be interpreted as "regulating or directing oneself in learning" or "learning by directing or self-regulating". Researchers use the term "learning based on self-regulation" to replace the term self-regulated learning, a term that is more efficient without reducing its meaning.

Zimmerman & Martinez-Pons (1990) proposed a formulation to explain learning based on self-regulation based on Bandura's triadic social cognitive theory. He said that students' efforts to regulate themselves in learning involve three determinants, namely the student's personal process, environment, and behavior. The application of learning strategies makes students be able to personally regulate their behavior and environment as well as regulate their metacognitive functions. The choice and use of strategies by students depends directly on their perception of their academic self-efficacy, and reciprocally through the feedback they receive. If the student's monitoring shows a deficiency in their performance, the student's self-efficacy will be low, and vice versa. if monitoring shows that the performance is effective, it will affect subsequent motivation and the choice of the used strategy. According to this triadic formulation, learning based on self-regulation is not an absolute functional state, but rather varies, depending on the academic context, the individual's attempts to self-regulate, and the outcome of behavioral performance.

The absence of the forced direction means that competent individuals must create conditions such as those among which are self-regulating (Kanfer et al., 2008). Meanwhile, individuals who do not have good self-regulation in themselves are more likely to procrastinate the various tasks they face and are easily tempted to do other activities that do not support the completion of their academic tasks such as playing games, playing more social media and so on.

Self-regulation has an important role in human behavior including academic procrastination behavior. The problems associated with procrastination and lack of self-regulation (Steel, 2007; Syapira et al., 2022) particularly in learning appear to be increasing. At the same time, it is expected that academic assignments are done on time and can be done structuredly and on time .

Rationale of the Current Study

Cases of student academic procrastination have increased dramatically. This case occurs, especially in Islamic universities (Rahman, 2020). Discipline, creativity, and having a high work ethic are indicators of quality Muslim human resources and a very decisive foundation. Muslim students who are currently studying are potential competitors who will face a high level of competition, but if disciplined behavior is ignored such as frequent academic procrastination, it will certainly be a problem for them, and can also be considered

as an indicator that they are still cannot be expected to become human resources as expected. Therefore, academic procrastination in Muslim students is a problem that needs attention.

Based on the explanation above, it can be emphasized that procrastination is a complex phenomenon related to various aspects of human activity. Explaining the relationship between personal epistemological belief and academic procrastination would potentially explain the role played multifacetedly by knowledge belief, sometimes the procrastination process is detrimental. In addition, self-regulation in learning is also an important aspect which can explain academic procrastination. Although it has been studied several times and is closely related to academic procrastination, it is still rare to place its position as a mediator variable between epistemological belief and academic procrastination.

Understanding the relationship of epistemological belief require what students believe about the nature of knowledge and believe about learning and self-regulation in learning to academic procrastination would be advantageous since a basic for future causal or explanatory research. If they are significant encouragement for academic procrastination, so assessments which focus on changing or improving academic abilities will ultimately enhance personal and professional achievement talent.

Hypotheses

- H1. Belief about knowledge a direct effect on the self-regulation in learning
- H2. Belief about knowledge has a direct effect on the academic procrastination.
- H3. Belief about learning has a direct effect on the self-regulation in learning
- H4. Belief about learning has a direct effect on the academic procrastination.
- H5. Self regulation in learning has a direct effect on the academic procrastination.

METHODS

Research Participant

Participants in this study are students of the Islamic Guidance and Counseling study program, Faculty of Islamic Da'wah and Communication, Kudus State Islamic Institute. The technique of taking participants in this study is purposive random sampling with the reasons as stated by Hadi (1984) that the election of a group of subjects based on certain characteristics or traits that considered to have a close relationship with the characteristics or characteristics previously known population which the steps to take the subject as a sample are carried out by, first, determining where students come from the Islamic Guidance and Counseling study program. Second, students who have taken thesis and third are students who have taken thesis for at least two semesters. The number of participants is 277 students.

Research Instruments

Four different scales were used in the data collection process. The scale is prepared based on the sumated rating method consisting of the five levels of assessment. The magnitude of the value ranges from 0 to 4. Prior to the distribution, the instrument has passed several adaptation stages, namely 1) forward translation, 2) item writing, 3) language testing, 4) field testing, 5) item selection, 6) contract validation and 7) final compilation.

The belief about the nature of knowledge

The belief about the nature of knowledge is an individual's belief about the nature of knowledge which includes following aspects (1) authority/expert knowledge that it derives from people who know more/an expert, (2) certain knowledge, and (3) orderly process. Generally, it can be said that the higher the value obtained, the more naive the belief about their knowledge. The number of statement items on the knowledge's belief scale is 8. Examples of items are; *"I like the class where the teacher before teaching determines the unit*

Table 1. Participant characteristics (N=277)

Variable	Percentage (N)
Gender	
Woman	61.7 (171)
Man	38.3 (106)
Age	
22-23	35.4 (98)
24-25	42.2 (117)
>26	22.4 (62)
Range of work for the current semester	
2-4 semesters	71.8 (199)
Over 4 semesters	28.2 (78)

of learning program”, “The answers in the reference book are very helpful because I am not sure of my own solutions” and “I feel comfortable when dealing with uncertain learning conditions”.

The Belief About Learning

Meanwhile, belief about learning is an individual's belief in learning which includes; (1) quick learning and (2) innate ability. This epistemological belief is expressed by using an epistemological belief scale which is modified based on the epistemological belief scale developed by Jehng et al. (1993). Generally, it can be said that the higher the value obtained, the more naive the belief about learning is. The number of statement items on the belief scale in learning is 6. Examples of items are; *"If I can't understand something quickly, I usually have difficulty in learning it as a whole"* and *"Students who have moderate achievement in SMP/MTs, will remain the same and achieve moderately when they are high school students."*

Self-regulation

Self-regulation in learning is a learning activity which is carried out by people actively both motivationally, metacognitively, and learning behavior. This variable is revealed by using a learning scale based on self-regulation with the dimensions of motivation, metacognition and behavior as proposed by Zimmerman (1989). Overall, the learning scale based on self-regulation is 30 items, with 11 items for the motivation dimension. Examples of items are; *"If I plan something, I'm pretty sure I can carry it out."* The metacognition dimension consists of 9 items, examples of which are; *"To produce a good work, I determine every step in the preparation"*. Meanwhile, the behavioral dimension consists of 10 items. Examples of items are; *"The biggest problem for me is hard to begin my ta"*.

Academic procrastination

Academic procrastination is the tendency of people to respond to the final lecture they have by keeping a long time to start or finish the performance intentionally to carry out other unnecessary activities to complete assignments, referring to the academic procrastination theory of Solomon and Rothblum (1984). The indicators are the delay in starting to complete the performance in having the task, the slack in doing the task, the time gap between the plan and the actual performance in doing the task and the tendency to do other activities which are considered having more enjoying and pleasure. Overall, the academic procrastination scale is 32 items. Examples of items are; *"In preparing the lecture task which has deadline, I often waste the time by doing others"* and *"I always say I will do it tomorrow"*.

Table 2. Results of validity and reliability of research instruments

Variable	Standardized loading	α
Belief about Knowledge		.853
Certain Knowledge	.805	
Omniscient	.824	
Simple Knowledge	.755	
Belief about Learning		.843
Innate ability	.773	
Quick learning	.826	
Self Regulation		.871
Motivation	.833	
Metacognition	.918	
Behavior	.733	
Academic Procrastination		.869
Delay in starting to complete the performance	.912	
Slowness in doing the task	.889	
Time gap between the plan and the actual performance	.726	
Tendency to do other activities	.566	

Table 3. Description of research data

Variables	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Belief about knowledge	277	0	32	21.17	6.949
Belief about learning	277	0	12	7.98	2.475
Self-regulation	277	0	120	67.77	27.362
Academic Procrastination	277	10	116	82.54	20.669

Table 4. The Result of Causality Test Regression Weight

Variables	<i>Estimate</i>	<i>SE</i>	<i>CR</i>	<i>P</i>
Belief about knowledge → self-regulation in learning	.157	.071	2,203	.028
Belief about knowledge → academic procrastination	-.157	.047	-3,314	.000
Belief about learning → self-regulation in learning	.199	.097	2,053	.040
Belief about learning → academic procrastination	-.147	.063	-2	.019
Self-regulation in learning → academic procrastination	-.097	.045	-2	.030

Validity test

Validity test is done through unidimensionality test on each construct with confirmatory factor analysis. Based on the results of confirmatory analysis, it is found that the fit criteria value has been achieved well. The reliability Alpha Cronbach calculation result of the belief about knowledge gets .853, while belief about learning gets .843, self-regulation in learning reliability is .871, and academic procrastination reliability is .869. Thus, all variables get quite good reliability above .70, so it can be stated that all used variables have met the reliability requirements. A summary of the validity and reliability test results of each research instrument can be seen in table 2.

Data Analysis Techniques

The used technique to analyze the data in this study uses *Structural Equation Models* Models. For the analysis needs, the Analysis of Moment Structures (AMOS) software program is used.

RESULTS AND DISCUSSION

Results

Before analyzing the model, descriptive research data for each scale will be presented first. The statistical description of the research data is summarized in table 3. Based on table

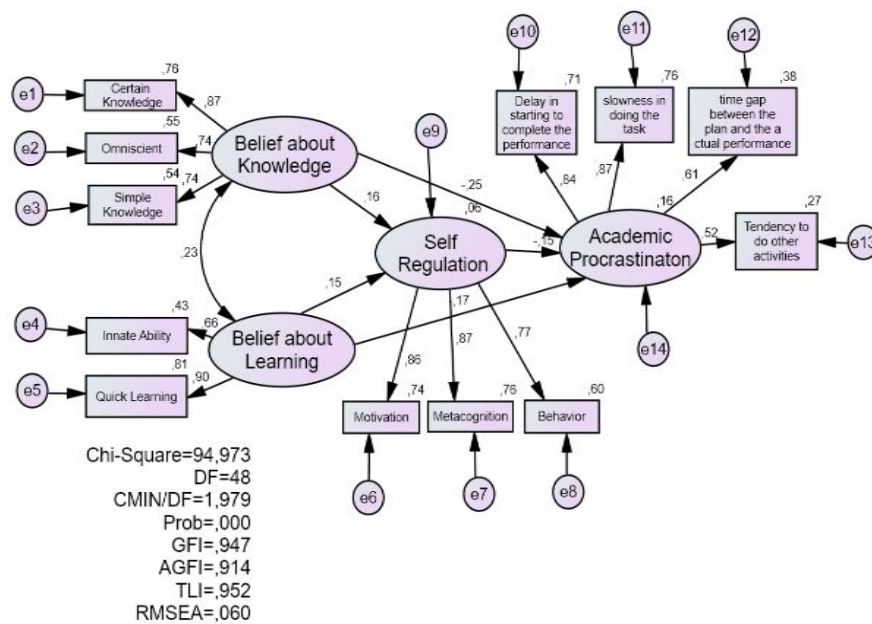


Figure 1. Analysis Results of the Model of Epistemological Beliefs and Self-regulation's Influence on Student Academic Procrastination

2, it is known that the belief about knowledge variable has an empirical score of 21.17, with a standard deviation of 6.949, the belief about learning variable has an empirical score of 7.98, with a standard deviation of 2.475, the variable of self-regulation in learning has an empirical mean score of 67.77, with a standard deviation of 27.362, and the academic procrastination variable has an empirical mean score of 82.54 with a standard deviation of 20.669.

Before analyzing the structural equation model wholly, the unidimensionality test for each construct is carried out using confirmatory factor analysis. Based on the results of the confirmatory analysis on each variable, it shows that the value of the fit criteria is achieved well. Likewise, the significance values of the estimated *standardized loading parameters* are all above .05.

After some of the proposed conditions are met, the next step is to test the hypothesis in the form of testing the theoretical model data with empirical data as a whole.

Based on the analysis results of the initial structural model, it shows that the Chi-Square is 89.285 (DF = 48, p = .000), CMIN/DF = 1.860, GFI = .920, AGFI = .870, TLI = .944 and RMSEA = .070. That the criteria for several model acceptance conditions have been met properly except for the p-value which is still below .005. Because the other criteria have been met, it is decided not to reprocess or repair. The results of the analysis can be seen in

Estimation of *loading factors* or *lambda value* which is an evaluation of the results of the regression weights between latent variables and degrees of freedom (df), CR value or t-count (with a significance probability value of .05), can be known after being analyzed through AMOS statistics program assistance. The results of the causality test regression weights are presented in table 4.

From table 3, it is known that the variable of belief about knowledge has a significant positive effect on self-regulation in learning ($r = .157, p = .028$), the variable of belief about knowledge has a significant negative effect on academic procrastination ($r = -.157, p = .000$). The variable of belief about learning also has a significant positive effect on self-regulation in learning ($r = .199, p = .040$). The variable of belief about learning has a significant negative effect on academic procrastination ($r = -.147, p = .019$), the variable of self-regulation in

learning also has a significant negative effect on academic procrastination ($r = -.097$, $p = .030$).

Based on the results of the analysis above, it can be concluded that the variables of belief about knowledge have a significant positive effect on self-regulation in learning and have a negative influence on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Discussion

This study aims to examine the theoretical model of epistemological beliefs' influence in the form of belief about knowledge and belief about learning as well as self-regulation on academic procrastination.

Based on the analysis results, it is found that the variable of belief about knowledge has a significant positive effect on self-regulation in learning and had a negative effect on academic procrastination. The variable of belief about learning has a significant positive effect on self-regulation in learning and has a significant negative effect on academic procrastination. Moreover, the variable of self-regulation in learning also has a significant negative effect on academic procrastination.

Previous research results related to academic procrastination influenced by fear of failure (Abdi Zarrin et al., 2020; Steel, 2007; Unda-López et al., 2022). Fear of failure associated with self-efficacy (J. R. Ferrari et al., 1992) may represent students' insight that tasks in the learning process obviously involve belief about knowledge and learning or epistemological belief itself. Research on task procrastination (J. R. Ferrari et al., 1995; Hess et al., 2000; Sénécal et al., 1995; Solomon & Rothblum, 1984) reflects epistemological beliefs.

Based on this study results indicate that students who believe that knowledge is certain (certain knowledge), absolute, unchangeable, and not tentative, that knowledge comes from people who know more or are expert (authority or expert knowledge) such as lecturers or reference books and that the way to get knowledge is an orderly process or simple knowledge tends not to do academic procrastination. This can happen because students are obedient in carrying out what the lecturer says and doing it.

On the other hand, students who have sophisticated epistemological beliefs, who tend to believe that knowledge is tentative, and do not believe that knowledge is certain and changeable, that knowledge comes from the construction of one's own thoughts through the process of formulating personal facts independently tends to do academic procrastination. This phenomenon can be explained that if lecture assignments are considered challenging or difficult because of the complexity of knowledge, then epistemological beliefs can affect academic delays in starting or completing work. As an illustration related to task procrastination and naive epistemological beliefs, Ferrari et al. (1992) reported that task avoidance is a major motivator for procrastination for college students.

In addition, people with naive epistemological beliefs may be associated with perfectionism. Perfectionist students prefer to procrastinate because of the understanding that knowledge is complex, process-oriented, changing, and comes from oneself. Due to their more mature epistemological beliefs and their consistent goal of optimizing all aspects of learning, these people procrastinate due to perfectionism and delay experience in starting assignments due to the high learning process.

Meanwhile, it is likely unrelated to perfectionism, it may also be rooted in mature epistemological beliefs. Due to the results of several studies on procrastination regarding skill,

time, and effort problems of more or lack of independent learning (Ghosh & Roy, 2017; Hailikari et al., 2021; Hong et al., 2021).

The students who have a belief about the nature of learning which can be done quickly and to understand something is very dependent on the first time learning it and requires innate ability or skills has lower academic procrastination, than the students who believe that learning is through a process of hard work. As students used to the "easy life" or at least minimal academic effort is required at lower levels of education, then when they are in college, the previous belief that knowledge should be simple and easy to learn will be possible in college, and will think it can be a pulse not to procrastinate at the next school.

Schommer (1990) argued that people's beliefs about how much time they take to achieve a goal, complete or finish a task are significant to epistemological beliefs about the nature to obtain it. The epistemic dimension of "fast learning" includes one belief about learning which can occur through a gradual process or occur quickly. On dimension of fast learning, students have a perspective which believes that to understand something is very dependent on the first time learning it and if a material is tried to be studied seriously, it will experience a kind of confusion (Jehng et al., 1993; Schommer-Aikins, 2004).

This study also shows that self-regulation in learning also has a significant negative effect on academic procrastination. It means that the higher the student's self-regulation, the lower the academic procrastination. That the way students regulate academic behavior has a significant effect on the extent to which students procrastinate. This study results indicate that the high procrastinators exhibit a lack of self-regulation in the three regulation areas: cognition, motivation, and behavior proposed in Pintrich's (2000) self-regulation model (Cahyani et al., 2019). This is consistent with the results reported in several recent studies that low self-efficacy for self-regulation is the strongest predictor of procrastination tendencies (Syapira et al., 2022; Ziegler & Opdenakker, 2018).

Students have not been able to avoid procrastination in achieving targets due to poor time management, inability to set priorities, too many tasks to be completed in a certain time, anxiety about tasks which make a lot of time spend thinking about what to worry about instead of doing them, difficult concentration, not knowing what is needed, feeling too pressured by tasks, thinking too much about failure or not being able to meet the expected standards, and fear of success.

Implications

Academic procrastination is a behavior which is detrimental ones. Some disadvantages of academic procrastination are that it makes the following tasks pile up, although tomorrow there are still other tasks to be done. The more there are piles of tasks, the more people are lazy to do. When going to do the task, it makes them feel like they are running out of time. In addition, the given tasks and not complete yet make other people's assessments not good. It could even reduce confidence in the ability of the procrastinator.

This research has implications for the importance of guidance and counseling, especially in counseling services in universities. The data from this study came from the respondents of Islamic guidance and counseling students. Considering the impact of the case of academic procrastination which is a problem of epistemological belief and self-regulation in learning, it means that it is important to provide counseling services on aspects of developing more sophisticated epistemological beliefs and about self-management in good learning in college students as an effort to minimize academic procrastination.

Limitations and Sugestions

This study has several limitations such as the research theme is approached only with a quantitative approach model. It is recommended to further deepen the findings in the field through

experiments, qualitative methods, or mixing methods which combine quantitative and qualitative approaches integratedly. It is expected to provide more information about the studied themes. In addition, the sample of this research is only limited to certain study programs where climate and institutional management can have an effect. Therefore, it is highly recommended to expand the population and sample in order to get more comprehensive illustrations and factors which influence academic procrastination.

CONCLUSIONS

This study is to examine the effect of epistemological belief which consists of belief about knowledge and learning and self-regulation in learning on academic procrastination. This study results indicate that belief about knowledge has a significant positive effect on self-regulation in learning and has a negative effect on academic procrastination, belief about learning has a significant positive effect on self-regulation in learning and has a significant effect on academic procrastination, and self-regulation in learning also has a significant negative effect on academic procrastination.

ACKNOWLEDGEMENT

No funding was received from any private or public agency for this study.

AUTHOR CONTRIBUTION STATEMENT

The authors contributed equally to the completion of this research.

REFERENCES

- Abdi Zarrin, S., Gracia, E., & Paixão, M. P. (2020). Prediction of academic procrastination by fear of failure and self-regulation. *Educational Sciences: Theory and Practice*, 20(3), 34–43. <https://doi.org/10.12738/jestp.2020.3.003>
- Alblwi, A., McAlaney, J., Altuwairiqi, M., Stefanidis, A., Phalp, K., & Ali, R. (2020). Procrastination on Social Networks: Triggers and Countermeasures*. *Psihologija*, 53(4), 393–410. <https://doi.org/10.2298/PSI190902016A>
- Balkis, M., & Duru, E. (2009). Prevalence of academic procrastination behavior among pre-service teachers, and its relationship with demographics and individual preferences. *Journal of Theory and Practice in Education*, 5(1), 18–32. <http://eku.comu.edu.tr/article/view/1044000004>
- Bandura, A. (2010). Self-Efficacy. In *The Corsini Encyclopedia of Psychology* (pp. 1–3). American Cancer Society. <https://doi.org/10.1002/9780470479216.corpsy0836>
- Batubara, J. (2017). The Contribution of Locus of Control to Academic Procrastination in Islamic Education Management Students in Indonesia. *Al-Ta Lim Journal*, 24(1), 29–36. <https://doi.org/10.15548/jt.v24i1.260>
- Baytelman, A., Iordanou, K., & Constantinou, C. P. (2020). Epistemic beliefs and prior knowledge as predictors of the construction of different types of arguments on socioscientific issues. *Journal of Research in Science Teaching*, 57(8), 1199–1227. <https://doi.org/10.1002/tea.21627>
- Bozgun, K., & Baytemir, K. (2021). Academic Self Efficacy and Dispositional Hope as Predictors of Academic Procrastination: The Mediating Effect of Academic Intrinsic Motivation. *Participatory Educational Research*, 9(3), 296–314. <https://doi.org/10.17275/per.22.67.9.3>
- Cahyani, B. H., Alsa, A., Ramdhani, N., & Khalili, F. N. (2019). The role of classroom management and mastery goal orientation towards student's self-regulation in learning Mathematics. *Psikohumaniora: Jurnal Penelitian Psikologi*, 4(2), 117–128. <http://dx.doi.org/10.21580/pjpp.v4i2.3576>

- Carden, R., Bryant, C., & Moss, R. (2004). Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychological Reports*, 95(2), 581–582. <https://doi.org/10.2466/pr0.95.2.581-582>
- Eisenbeck, N., Carreno, D. F., & Uclés-Juárez, R. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexibility. *Journal of Contextual Behavioral Science*, 13, 103–108. <https://doi.org/10.1016/j.jcbs.2019.07.007>
- Ferrari, J. (2017). *Are you a procrastinator? Here's how you're helping online scammers.* Guardian. [Google Scholar](#)
- Ferrari, J. R., Johnson, J. L., & McCown, W. G. (1995). Procrastination and Task Avoidance. *Procrastination and Task Avoidance*. <https://doi.org/10.1007/978-1-4899-0227-6>
- Ferrari, J. R., Parker, J. T., & Ware, C. B. (1992). Academic procrastination: Personality correlates with Myers-Briggs types, self-efficacy, and academic locus of control. *Journal of Social Behavior and Personality*, 7(3), 495–502. [Google Scholar](#)
- Flett, A. L., Haghbin, M., & Pychyl, T. A. (2016). Procrastination and Depression from a Cognitive Perspective: An Exploration of the Associations Among Procrastinatory Automatic Thoughts, Rumination, and Mindfulness. *Journal of Rational - Emotive and Cognitive - Behavior Therapy*, 34(3), 169–186. <https://doi.org/10.1007/s10942-016-0235-1>
- Ghosh, R., & Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students: Is there any gender divide? *Gender in Management*, 32(8), 518–534. <https://doi.org/10.1108/GM-01-2017-0011>
- Gueorguieva, J. M. (2012). Procrastination a measurement of types. In *Dissertation Abstracts International Section A: Humanities and Social Sciences* (Vol. 72, Issues 11-A, p. 4006). [Google Scholar](#)
- Hadi, S. (1984). *Metodologi Research 2* (Vol. 2). Penerbit Andi.
- Hailikari, T., Katajavuori, N., & Asikainen, H. (2021). Understanding procrastination: A case of a study skills course. *Social Psychology of Education*, 24(2), 589–606. <https://doi.org/10.1007/s11218-021-09621-2>
- Hess, B., Sherman, M. F., & Goodman, M. (2000). Eveningness Predicts Academic Procrastination: The Mediating Role of Neuroticism. *Journal of Social Behavior and Personality*, 15(5), 61–74. [Google Scholar](#)
- Hockey, G. R. J. (1983). Current Issues and new directions. *Stress and Fatigue in Human Performance*, 15(5), 363–373. [Google Scholar](#)
- Hofer, B K. (2001). Personal Epistemology. In B K Hofer & P. R. Pintrich (Eds.), *Personal Epistemology* (pp. 3–14). Lawrence Erlbaum Associates. <https://doi.org/10.4324/9781410604316>
- Hofer, Barbara K. (2004). Introduction: Paradigmatic Approaches to Personal Epistemology. *Educational Psychologist*, 39(1), 1–3. https://doi.org/10.1207/s15326985ep3901_1
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, 174(7). <https://doi.org/10.1016/j.paid.2021.110673>
- Jackson, T., Weiss, K. E., Lundquist, J. J., & Hooper, D. (2003). The impact of hope, procrastination, and social activity on academic performance of midwestern college students. *Education*, 124(2), 310–320. [Google Scholar](#)
- Jehng, J. C. J., Johnson, S. D., & Anderson, R. C. (1993). Schooling and students' epistemological beliefs about learning. *Contemporary Educational Psychology*, 18(1), 23–35. <https://doi.org/10.1006/ceps.1993.1004>
- Johnson, E. M., Green, K. E., & Kluever, R. C. (2000). Psychometric characteristics of the revised procrastination inventory. *Research in Higher Education*, 41(2), 269–279.

- <https://doi.org/10.1023/A:1007051423054>
- Kanfer, R., Chen, G., & Pritchard, R. (2008). *Work motivation: Past, present and future*. Google Scholar
- Klingsieck, K. B. (2013). Procrastination when good things don't come to those who wait. *European Psychologist, 18*(1), 24–34. <https://doi.org/10.1027/1016-9040/a000138>
- Lee, D. Gwi, Kelly, K. R., & Edwards, J. K. (2006). A closer look at the relationships among trait procrastination, neuroticism, and conscientiousness. *Personality and Individual Differences, 40*(1), 27–37. <https://doi.org/10.1016/j.paid.2005.05.010>
- Liu, G., Cheng, G., Hu, J., Pan, Y., & Zhao, S. (2020). Academic Self-Efficacy and Postgraduate Procrastination: A Moderated Mediation Model. *Frontiers in Psychology, 11*(1752). <https://doi.org/10.3389/fpsyg.2020.01752>
- Mao, B., Chen, S., Wei, M., Luo, Y., & Liu, Y. (2022). Future Time Perspective and Bedtime Procrastination: The Mediating Role of Dual-Mode Self-Control and Problematic Smartphone Use. *International Journal of Environmental Research and Public Health, 19*(16), 10334. <https://doi.org/10.3390/ijerph191610334>
- Merk, S., Rosman, T., Muis, K. R., Kelava, A., & Bohl, T. (2018). Topic specific epistemic beliefs: Extending the Theory of Integrated Domains in Personal Epistemology. *Learning and Instruction, 56*, 84–97. <https://doi.org/10.1016/j.learninstruc.2018.04.008>
- Milgram, N. (1991). *Procrastination: Encyclopedia of Human Biology*. Academic Press.
- Oflazian, J. S., & Borders, A. (2022). Does Rumination Mediate the Unique Effects of Shame and Guilt on Procrastination? *Journal of Rational - Emotive and Cognitive - Behavior Therapy*. <https://doi.org/10.1007/s10942-022-00466-y>
- Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. *Assessment and Evaluation in Higher Education, 29*(1), 3–19. <https://doi.org/10.1080/0260293042000160384>
- Onwuegbuzie, A. J., & Jiao, Q. G. (2000). I'll go to the library later: The relationship between academic procrastination and library anxiety. *College and Research Libraries, 61*(1), 45–54. <https://doi.org/10.5860/crl.61.1.45>
- Pintrich, P. R. (2000). The Role of Goal Orientation in Self-Regulated Learning. In *Handbook of Self-Regulation* (pp. 451–502). <https://doi.org/10.1016/b978-012109890-2/50043-3>
- Przepiórka, A., Błachnio, A., & Siu, N. Y. F. (2019). The relationships between self-efficacy, self-control, chronotype, procrastination and sleep problems in young adults. *Chronobiology International, 36*(8), 1025–1035. <https://doi.org/10.1080/07420528.2019.1607370>
- Qiuzhu, C. (2016). Study on the Relationship between Academic Procrastination and Academic Self-efficacy of Junior Middle School Students. *Journal of East China Normal University (Educational ...)*, 35, 146–152. <https://xbjk.ecnu.edu.cn/EN/abstract/abstract8981.shtml>
- Rahman, I. K. (2020). The development of e-counseling gestalt prophetic to help students cope with academic procrastination in Indonesian Islamic higher education. *Islamic Guidance and Counseling Journal, 3*(1), 46–53. <https://doi.org/10.25217/igcj.v3i1.614>
- Ren, Z. (2006). A cross-cultural study of epistemological beliefs and moral reasoning between American and Chinese college students. In *ProQuest Dissertations and Theses* (pp. 182-182 p.). Google Scholar
- Rosman, T., Peter, J., Mayer, A. K., & Krampen, G. (2018). Conceptions of scientific knowledge influence learning of academic skills: epistemic beliefs and the efficacy of information literacy instruction. *Studies in Higher Education, 43*(1), 96–113. <https://doi.org/10.1080/03075079.2016.1156666>
- Schommer-Aikins, M. (2004). Explaining the Epistemological Belief System: Introducing the Embedded Systemic Model and Coordinated Research Approach. *Educational*

- Psychologist*, 39(1), 19–29. https://doi.org/10.1207/s15326985ep3901_3
- Schommer, M. (1990). Effects of Beliefs About the Nature of Knowledge on Comprehension. *Journal of Educational Psychology*, 82(3), 498–504. <https://doi.org/10.1037/0022-0663.82.3.498>
- Senécal, C., Julien, E., & Guay, F. (2003). Role conflict and academic procrastination: A self-determination perspective. *European Journal of Social Psychology*, 33(1), 135–145. <https://doi.org/10.1002/ejsp.144>
- Senécal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *Journal of Social Psychology*, 135(5), 607–619. <https://doi.org/10.1080/00224545.1995.9712234>
- Sheehy, K., Budiyanto, Kaye, H., & Rofiah, K. (2019). Indonesian teachers' epistemological beliefs and inclusive education. *Journal of Intellectual Disabilities*, 23(1), 39–56. <https://doi.org/10.1177/1744629517717613>
- Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, 31(4), 503–509. <https://doi.org/10.1037/0022-0167.31.4.503>
- Stead, R., Shanahan, M. J., & Neufeld, R. W. J. (2010). “I’ll go to therapy, eventually”: Procrastination, stress and mental health. *Personality and Individual Differences*, 49(3), 175–180. <https://doi.org/10.1016/j.paid.2010.03.028>
- Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, 133(1), 65–94. <https://doi.org/10.1037/0033-2909.133.1.65>
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How Study Environments Foster Academic Procrastination: Overview and Recommendations. *Frontiers in Psychology*, 11(540910). <https://doi.org/10.3389/fpsyg.2020.540910>
- Syapira, S. A., Budiman, B., & Selamat, M. N. (2022). Self-Efficacy and Self-Regulation With Academic Procrastination in Muslim Adolescents During the Online Learning Period. *Psikis: Jurnal Psikologi Islami*, 8(1), 88–101. <https://doi.org/10.19109/psikis.v8i1.11894>
- Unda-López, A., Osejo-Taco, G., Vinuesa-Cabezas, A., Paz, C., & Hidalgo-Andrade, P. (2022). Procrastination during the COVID-19 Pandemic: A Scoping Review. *Behavioral Sciences*, 12(2), 38. <https://doi.org/10.3390/bs12020038>
- van Eerde, W. (2003). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*, 35(6), 1401–1418. [https://doi.org/10.1016/S0191-8869\(02\)00358-6](https://doi.org/10.1016/S0191-8869(02)00358-6)
- van Eerde, W., & Venus, M. (2018). A daily diary study on sleep quality and procrastination at work: The moderating role of trait self-control. *Frontiers in Psychology*, 9(NOV). <https://doi.org/10.3389/fpsyg.2018.02029>
- Winberg, T. M., Hofverberg, A., & Lindfors, M. (2019). Relationships between epistemic beliefs and achievement goals: developmental trends over grades 5–11. *European Journal of Psychology of Education*, 34(2), 295–315. <https://doi.org/10.1007/s10212-018-0391-z>
- Xenofontos, C. (2018). Greek-Cypriot elementary teachers' epistemological beliefs about mathematics. *Teaching and Teacher Education*, 70, 47–57. <https://doi.org/10.1016/j.tate.2017.11.007>
- Zhang, C. H., Si, J. W., & Zhang, B. C. (2010). A review of the study on influencing factors of learning procrastination. *J. Shandong Univ. Technol*, 26, 106–109. [Google Scholar](https://scholar.google.com/citations?user=...)
- Ziegler, N., & Opdenakker, M. C. (2018). The development of academic procrastination in first-year secondary education students: The link with metacognitive self-regulation,

self-efficacy, and effort regulation. *Learning and Individual Differences*, 64, 71–82.
<https://doi.org/10.1016/j.lindif.2018.04.009>

Zimmerman, B. J., & Martinez-Pons, M. (1990). Student Differences in Self-Regulated Learning: Relating Grade, Sex, and Giftedness to Self-Efficacy and Strategy Use. *Journal of Educational Psychology*, 82(1), 51–59. <https://doi.org/10.1037/0022-0663.82.1.51>

Copyright holder :

© Ghufron, M. N., & Suminta, R. R.

First publication right :

Islamic Guidance and Counseling Journal

This article is licensed under:

CC-BY-SA