

Maladaptive Metacognitive Perspective on Academic Procrastination

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Abstract

The present study was to elucidate how maladaptive metacognition affected academic procrastination. The sample consisted of 100 undergraduate students (50 boys and 50 girls) chosen from D.D.U Gorakhpur University, Gorakhpur Uttar Pradesh, India. The participants were individually administered the Hindi version of the Maladaptive Metacognitions Questionnaire and Academic Procrastination Scale, and the scores below Mean-1SD and above Mean+1SD on the facets of Maladaptive Metacognitions were respectively designated as low and high scorer participants (boys and girls). The effects of levels (low & high) of positive metacognitions and meta-emotions on genders (boys and girls) were analyzed by applying 2×2 ANOVA (2 genders \times 2 levels of facets of Maladaptive Metacognitions) and results revealed a non-significant main effect of "Gender" on any behavioral measures (AP-1 and AP-2), whereas, the significant main effect of (i) levels of Positive Belief on AP-2 (ii) Levels of cognitive confidence on AP1 (iii) Levels of SPR on AP-1 (iv) Levels of uncontrollability and danger on AP-1 (v) levels of cognitive self-consciousness on AP- 2, and (vi) Levels of MCT on AP-1 and AP-2. The mean comparison revealed that high scorers as compared to low scorers, manifested higher levels of AP-1 and AP2. Results also manifested a non-significant interaction effect of 'Gender X Levels of sub-factors of MCQ on 'AP-1 and AP-2.

INTRODUCTION

Metacognition denotes the capacity to actively manage and exert control over the cognitive processes that are engaged in the learning process. "Metacognition" is a term that involves both metacognitive experiences and knowledge, and metacognitive knowledge refers to knowledge that has been obtained about the cognitive process and that may be applied to the management of cognitive processes (Flavel, 1979). Metacognitive knowledge encompasses both an individual understanding of one's own learning process and a generic understanding of how humans learn and absorb information. According to Flavel (1979), cognitive knowledge is the understanding of one's own cognitive strengths and weaknesses as well as the internal and external variables that may interact to influence cognition. Metacognition refers to the thought processes involved in the monitoring and evaluation of one's thoughts;

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it is succinctly summarized as “thinking about thinking,” and that captures one’s ability to both monitor one’s learning (self-reflection) and control their behavior as a function of this monitoring (Wells & Matthews, 1996).

Maladaptive Metacognition

Maladaptive metacognition is the term used to describe when a person’s way of thinking starts to become detrimental to their general well-being. It occurs when they have skewed or unfavorable ideas about the world, other people, or themselves. It resembles thinking erroneous or negative ideas about the world, other people, or yourself. These ideas may have an impact on your feelings, behaviors, and day-to-day functioning. It’s critical to confront and alter these detrimental beliefs in order to advance well-being. The term “maladaptive metacognition” describes situations in which our cognitive processes and tactics do not serve us well. It’s similar to thinking of useless or inefficient ideas that can get in the way of our ability to learn, make decisions, or solve problems. For instance, it can impede our development if we consistently underestimate ourselves or have self-doubt. In order to create more advantageous and fruitful thought processes, it is critical to recognize and deal with these tendencies.

Procrastination

Procrastination is usually understood to be defined as persistently delaying actions, regardless of the repercussions (Van Eerde, 2003). In most cultures, procrastination can be harmful to an individual, particularly in American society, where people place a high value on performance and outcomes (Klassen *et al.*, 2008). Numerous issues arise when students procrastinate (Owens & Newbegin, 1997). “Procrastination is the deliberate and needless delaying of a task that has to be done, to the point that someone experiences inconvenience.” Procrastinating raises stress levels and lowers the caliber of academic work (Schraw *et al.*, 2007). Several studies are already available on the various elements that contribute to procrastination; however, procrastination can also be caused by aspects of the educational environment beyond just examining its individual causes. Based on scholarly investigations, procrastination

may be impacted by educational and contextual elements. Since the learning environment is flexible, the outcomes can assist in setting up the learning environment to lessen procrastination.

While procrastination is generally regarded as a personality trait (Ferrari *et al.*, 1995), individuals who are not prone to postpone daily tasks or decisions may procrastinate when it comes to academic tasks for a variety of reasons, including study habits, an underestimate of deadlines, or the belief that the task can be completed quickly (McCloskey, 2011). This statistic highlights the variation in academic procrastination that many students experience. Academic procrastination is a frequent learning style among university students (McCloskey, 2011; UzunÖzer&Saçkes, 2011); however, it may be seen in students of all ages. However, this particular type of procrastination is highlighted.

Academic Procrastination

Academic procrastination can be defined as the deliberate and unreasonable tendency to put off a study-related task even when it is certain to have negative and unwanted outcomes (Steel & Kling-sieck, 2016; Zacks & Hen, 2018). When it comes time to complete the things we have planned and desired, we opt for instant pleasure (Nordby *et al.*, 2019). The most frequently mentioned personal concern among college students is putting off doing their coursework. Gallagher and Kelleher (1992) found that 52% of students in their survey required assistance with procrastination. According to Schaw *et al.* (2007), over 70% of college students regularly participate in this kind of procrastination, which has been connected to worse academic outcomes (Goroshit, 2018; Qian&Fuqiang, 2018). Procrastination has a range of negative psychological, behavioral, and physical effects, yet the evidence on its adaptive and maladaptive aspects is still equivocal (Habelrih & Hicks, 2015; Constantin *et al.*, 2018; Khalid *et al.*, 2019; Shokeen, 2018). Delaying things can be detrimental to psychological health since students rush to complete tasks and meet deadlines. It can also harm their self-image and create a bad impression on others because of inconsistent professional behavior (Dautov, 2020). When people miss deadlines and commitments, relationships suffer (Kim,

2018; Krause & Freund, 2014).

Studies have indicated a correlation between intelligence and metacognition, or the capacity to regulate one's cognitive processes or self-regulation, leading to the hypothesis that students possessing metacognition are more likely to be successful learners (Borkowski, Carr, & Pressely (1987), Brown (1987), Sternberg (1984), Sternberg (1986a), Sternberg (1986b), Sterberg (1984, 1986a, 1986b). Sterberg (1984, 1986a, 1986b) asserts that the brain's executive functions are responsible for metacognition, or self-regulation, which includes organizing, assessing, and supervising problem-solving efforts. In his triarchic theory of intelligence refers to these executive processes as "metacomponents." Metacomponents are executive processes that both accept input from and exert control over other cognitive components. In addition, Sternberg asserted that metal components are in charge of "determining the best way to perform a specific task or series of tasks and ensuring that the task or series of tasks is completed accurately." Dent and Koenka (2016) have highlighted the connection between academic achievement and metacognition. Their research indicates that there is a significant positive correlation between these characteristics.

Landine and Stewart (1998) studied the connection between metacognition, motivation, locus of control, and self-efficacy, as well as the relationship between academic achievement, and discovered that there is a statistically significant positive relationship between metacognition, locus of control, and self-efficacy. Levy and Ramim (2012) examined a dataset of 1629 online exam records from a university in the Southeast of the United States using data analytic techniques. After examining five terms of data, they discovered that 58% of students submitted their projects on the final day of a task completion window that lasted a week. Additionally, the procrastinators scored much lower (82.9) than the non-procrastinators (87.7).

Kim and Seo (2015) synthesized findings from a meta-analysis of 33 relevant studies involving a total of 38,529 participants. Their analysis revealed procrastination to be negatively correlated with academic performance. However, this relationship was not significant and was influenced by the choice of

measures or indicators as well as the use of self-report scales and demographic characteristics of the participants. They also reported academic procrastination to be most strongly correlated with academic performance in younger students.

Other studies emphasized the negative outcomes of procrastination in academic settings, including psychological distress, anxiety, decrease in health condition, negative health behaviors, reduced well-being, low academic performance, regret, and avoidance of social relations (Kim & Seo, 2015; Krause & Fruend, 2014; Sirois & Pychyl, 2013; Steel & Ferrari, 2013).

In a different study, Akpur (2017) looked at academic procrastination and its connections to motivation, anxiety in foreign language classes, and academic achievement in language learning. Academic procrastination and motivation were shown to be significantly negatively correlated, as was academic achievement in language learning and academic procrastination, according to data collected from 211 first-year university students. Aydoğan and Akbarov's (2018) study also discovered a negative association between the academic procrastination of 213 university students and their self-reported English ability and English grades. In their study, academic procrastination among EFL learners was found to be connected both positively and negatively with inner and extrinsic motivation to learn a foreign language.

As with the dearth of research on academic procrastination and language learning, there are also relatively few studies examining self-reported remedies or recommendations for academic procrastination, despite the fact that 95% of procrastinators are willing to cut back on their behavior generally (O'Brien, 2002). One study that looks at ways to lessen academic procrastination looks at 691 first-year and senior students at a Turkish university's education faculty who are majoring in various subjects (Yeşil, 2012). According to the data collected using a scale, some of the recommended strategies include making sure that students actively participate in class, giving them easy access to the internet and library, giving them a study space of their own, giving them a chance to ask questions and share their ideas in class, teaching them about effective study techniques, and giving examples of teachers' study habits.

Hypotheses

To meet the aforementioned objectives following hypotheses are being proposed:

- The main effects of gender (girls and boys) on the behavioral measures are exploratory in nature.
- High as compared to low scores on the facets of maladaptive metacognitions would manifest higher indices on the measures of procrastination.
- The effects of two-factor interactions between gender and levels of facets of maladaptive metacognitions (gender X levels of facets of maladaptive metacognitions) on measures of procrastination are exploratory in nature. It is expected that two-factor interaction effects would be in conformity with the main effects of the independent variables on the measures of the dependent variables.

METHODS

Sample

Over 100 male and female (17–21 years old) respondents (50 male and female) with at least intermediate qualification from Gorakhpur district of Uttar Pradesh were sampled by purposive sampling procedure for the conduct of the present study. A number of extraneous variables like ecological background, socio-economic status, age, gender, religion, marital status, employment status and family structure will be recorded with the objective of equating/matching the sample to obtain a representative sample for the conduct of the study.

Design of Research

To achieve the objective, low-scorer (Mean – 1SD) and high-scorer (Mean + 1SD) participants on the facets of maladaptive metacognitions, besides the 'gender' (boys and girls), were screened out and their corresponding scores on the measures of procrastination (dependent variables) shall be analyzed by employing 2 X 2 factorial designs (2 gender x 2 levels of facets of maladaptive metacognitions on the measures of the procrastination).

Behavioral Measure

The study under the report shall employ the Hindi version of the behavioral measures of (i) the maladaptive metacognitions questionnaire (Jaiswal *et al.*, 2021) and (ii) the academic procrastination scale (Meshram, 2023).

Maladaptive Meta-cognitions Questionnaire (MCQ; Jaiswal *et al.*, 2021)

The Hindi translation of the maladaptive meta-cognitions questionnaire (MCQ; Cartwright-Hatton & Wells, 1997) was employed in the current study. It is a 65-item scale designed for measurement purposes of metacognitions. It is a multi-component measure of a range of metacognitive beliefs and monitoring tendencies, specifically with relation to intrusive thinking, worry, cognitive functioning, and the tendency to monitor thought processes. The test comprised five subscales (positive beliefs about worry, uncontrollability and danger, cognitive confidence, superstitions, punishment and responsibility, and cognitive self-consciousness). With the prior permission of Dr. A. Wells, the test items of MCQ (Cartwright-Hatton & Wells, 1997) were translated into Hindi for evaluation of its psychometric adequacy in Hindi-speaking samples in India. Here, it deserves to be mentioned that the response formats of the questionnaire were maintained, as reported by Cartwright-Hatton and Wells (1997). That is, the respondents were asked to indicate how much they agree with each statement on a four-point scale, labeled as "do not agree" (given a score of 1) on the one extreme and "agree very much" (given a score of 4) on the other. The Hindi translation of the meta-cognitions questionnaire (MCQ) is named Metacognitions Questionnaire- Hindi (MCQ-H).

Academic Procrastination Scale (APS; Meshram, 2023):

The Academic Procrastination Scale (APS, McCloskey, and Scielzo, 2015) is a 25-item questionnaire to be self-rated on a 1–5 Likert-type scale, with 1 = disagree and 5 = agree. The Hindi version of the scale

that was developed by Sakshee Meshram (2023) was used, which consists of two factors: AP-1" and d "AP-2." The APS has high internal consistency, with a Cronbach alpha of 0.94, indicating high reliability. The APS exhibited good content, construct, and convergent validity. APS also demonstrated no gender, ethnicity, major, or year differences. However, APS predicted scores above and beyond Scholastic Aptitude Test (SAT) scores, predicting GPA. Initially, APS consisted of six unique facets of academic procrastination: a) psychological beliefs regarding abilities, b) distractions, c) social factors, d) time management, e) personal initiative, and f) laziness. However, factor analysis by PCA and CFA yielded a single factor.

Procedure

First of all, good rapport was established with the respondent, who was kept relaxed and pleasant in order to elicit the most frank or candid answers possible, advised not to dwell for any length of time on any given item, gave his overall reaction, was informed that there is no right or wrong answer to any item, and was encouraged to respond rapidly and the way they really felt. The three behavioral measures were administered to the respondents in a random manner so as to overcome the problems of carrying over, if any, of the response set(s) of the succeeding test on the preceding test and to find an anonymous response from the respondent.

RESULTS

The Hypotheses of the study aimed to elucidate the main and interaction effects of 'gender' (boys and girls) and 'Levels' (low and high) of facets of metacognition (maladaptive) separately on facets of Academic Procrastination in the Indian cultural context. In the Table 1, 2x2 ANOVA revealed a non-significant main effect of "Gender" on 'Academic Procrastination -1' ($F(1/35)=0.966, p>0.05$) and 'Academic Procrastination -2' ($F(1/35)=.628, p>0.05$), and a non-significant main effect of levels of positive belief on 'academic procrastination -1' ($F(1/35) =.546, p>0.05$), whereas significant main effect of "levels of Positive Belief on Academic Procrastination -2" ($F(1/35) = .018, p<0.05$). Results also manifested non-significant interaction effect of

'Gender X Levels of Positive Belief' on 'Academic Procrastination-1' ($F(1/35)=.249, p>0.05$) and 'Academic Procrastination -2' ($F(1/35)=.799, p>0.05$). Post hoc mean comparisons for significant levels effect for Positive Belief [vide Tables- 3] demonstrated that low scorers (Mean = 16.76, SD = 5.80) as compared to high scorers (mean = 12.00, SD= 4.91) manifested significantly higher levels of Academic Procrastination -2.

Results elicited significant main effect of "Gender" on 'Academic Procrastination -1' ($F(1/34)=.041, p<0.05$), and non-significant effect of "Gender" on 'Academic Procrastination-2' ($F(1/34)=.599, p>0.05$). Moreover, the significant main effect of "Levels" of cognitive confidence on 'Academic Procrastination-1' ($F(1/34) =.043, p<0.05$), and non-significant effect of "Levels" of cognitive confidence on "Academic Procrastination-2" ($F(1/34)=.503, p>0.05$). Results also manifested a non-significant effect of 'Gender X Levels of cognitive confidence' on 'Academic Procrastination-1' ($F(1/35) =.848, p>0.05$) and 'Academic Procrastination-2' ($F(1/35)=.561, p>0.05$). Post hoc comparison showed boys as compared to girls significantly revealed more Academic Procrastination-1 and high scorers as compared to low scorers on cognitive confidence demonstrated higher levels of Academic Procrastination-1.

The 2x2 ANOVA showed a non-significant main effect of "Gender" on 'Academic Procrastination-1' ($F(1/43)=.560, p>0.05$) and 'Academic Procrastination-2' ($F(1/43)=.343, p>0.05$). Moreover, the significant main effect of Levels of superstitions, punishment and responsibility on 'Academic Procrastination-1' ($F(1/43) =.061, p>0.05$), whenever the non-significant main effect of "levels of SPR on Academic Procrastination-2" ($F(1/43)=.673, p>0.05$). Results also manifested a non-significant effect of 'Gender X Levels of punishment, superstitions, and responsibility' on 'Academic Procrastination-1' ($F(1/43)=.883, p>0.05$) and 'Academic Procrastination-2' ($F(1/43)=.726, p>0.05$). Mean comparisons demonstrated that high scorers, as compared to low scorers manifested significantly higher levels of Academic Procrastination-1.

Results also revealed a non-significant main effect of "Gender" on 'Academic Procrastination-1' ($F(1/41)=.325, p>0.05$) and 'Academic Procrastination-2' ($F(1/41)=.365, p>0.05$). Moreover, the signifi-

Table 1: Mean \pm SD values of measures of academic procrastination (academic procrastination-1, academic procrastination-2) over levels of 2 gender (boys and girls) and 2 levels (low and high) of facets of maladaptive metacognitions

Facets of MCQ-H	Gender	Levels	Academic procrastination-1	Academic Procrastination-2
Positive beliefs	Boys	High (8)	41.12 \pm 12.81	12.62 \pm 3.66
		Low (10)	33.30 \pm 8.09	17.00 \pm 5.73
	Girls	High (6)	36.16 \pm 12.36	11.16 \pm 6.52
		Low (11)	38.63 \pm 15.60	16.54 \pm 6.13
Cognitive confidence	Boys	High (9)	40.55 \pm 13.05	15.55 \pm 5.76
		Low (8)	32.62 \pm 5.62	15.75 \pm 6.77
	Girls	High (9)	47.22 \pm 9.79	13.11 \pm 7.59
		Low (8)	40.62 \pm 9.67	15.87 \pm 4.82
Superstitions, punishment and responsibility	Boys	High (16)	41.25 \pm 11.74	13.56 \pm 4.57
		Low (8)	31.25 \pm 9.49	14.87 \pm 4.88
	Girls	High (9)	42.88 \pm 12.24	15.77 \pm 5.67
		Low (10)	34.00 \pm 13.19	15.90 \pm 6.45
Uncontrollability and danger	Boys	High (10)	41.80 \pm 12.21	15.20 \pm 5.30
		Low (9)	31.11 \pm 7.13	17.33 \pm 3.93
	Girls	High (12)	46.83 \pm 11.93	12.50 \pm 6.12
		Low (10)	32.80 \pm 10.21	17.00 \pm 5.12
Cognitive self-consciousness	Boys	High (13)	35.69 \pm 10.12	14.76 \pm 6.98
		Low (9)	32.55 \pm 7.87	17.77 \pm 3.27
	Girls	High (14)	37.35 \pm 12.63	10.85 \pm 5.27
		Low (7)	29.00 \pm 6.85	17.85 \pm 6.06
MCT	Boys	High (9)	42.22 \pm 15.42	13.11 \pm 4.04
		Low (8)	30.12 \pm 8.44	15.00 \pm 5.09
	Girls	High (9)	42.00 \pm 13.16	11.77 \pm 7.08
		Low (8)	34.44 \pm 13.75	18.00 \pm 6.46

MCT = Metacognitions Total

cant main effect of Levels of uncontrollability and danger on 'Academic Procrastination-1' ($F(1/41)=.001$, $p<0.05$) and 'Academic Procrastination-2' ($F(1/41)=.052$, $p<0.05$). The non-significant effect of 'Gender X Levels of uncontrollability and danger' on 'Academic Procrastination-1' ($F(1/41)=.662$, $p>0.05$) and 'Academic Procrastination-2' ($F(1/41)=.479$, $p>0.05$). Mean comparisons for significant levels effect for Uncontrollability and Danger demonstrated that

High scorer (Mean = 44.54, SD = 12.04) as compared to low scorer (mean = 32.00, SD= 8.69) manifested significantly higher levels of Academic Procrastination-1, however, low scorer (Mean = 13.72, SD = 5.79) as compared to high scorer (mean = 17.15, SD= 4.47) manifested significantly higher levels of Academic Procrastination-2.

ANOVA has shown a non-significant main effect of "Gender" on 'Academic Procrastination-1'

($F(1/43)=.772, p >0.05$) and 'Academic Procrastination-2' ($F(1/43)=.291, p >0.05$). Moreover, the non-significant main effect of Levels of cognitive self-consciousness on 'Academic Procrastination-1' ($F(1/43)=.084, p >0.05$), whenever the significant main effect of "levels of cognitive self-consciousness on Academic Procrastination-2" ($F(1/43)=.008, p <0.05$) was also revealed. Results also manifested a non-significant effect of 'Gender X Levels of cognitive self-consciousness' on 'Academic Procrastination-1' ($F(1/43)=.426, p >0.05$) and 'Academic Procrastination-2' ($F(1/43)=.272, p >0.05$). Post hoc mean comparisons for significant levels effect for cognitive self-consciousness demonstrated that low scorers, as compared to high scorers manifested significantly higher levels of academic procrastination-2.

Results revealed a non-significant main effect of "Gender" on 'Academic Procrastination-1' ($F(1)=.647, p >0.05$) and 'Academic Procrastination-2' ($F(1/35)=.675, p >0.05$). Moreover, a significant effect of Levels of MCT on 'Academic' ($F(1/35)=.612, p >0.05$) and 'Academic Procrastination-2' ($F(1/35)=.280, p >0.05$). Mean comparisons for significant levels effect for MCT demonstrated that High scorers as compared to low scorers manifested significantly higher levels of Academic Procrastination-1, whereas low scorers as compared to high scorers manifested significantly higher levels of Academic Procrastination-1' ($F(1/35)=.034, p <0.05$), and 'Academic Procrastination-2' ($F(1/35)=.048, p <0.05$). Results also manifested a non-significant effect of 'Gender X Levels of MCT' on 'Academic Procrastination-1' and Procrastination-2.

DISCUSSION

A current study was done to evaluate the effect of facets of maladaptive metacognitions on academic procrastination. Numerous indirect researches have been conducted in line with the current findings, but no direct investigations have been conducted in relation to the current study. Plentiful studies have looked into the function of metacognition beliefs in procrastination prediction (Fernie *et al.*, 2009; Spade, 2006; Marcantonio *et al.*, 2006). Positive attitudes regarding worry are the second characteristic that

is positively and significantly associated with procrastination (Fernie *et al.*, 2009). Marcantonio *et al.* (2006) specified a positive and significant relationship between procrastination and the requirement for mind control. The study exposed that procrastination is negatively correlated with cognitive self-consciousness. High procrastination in behavior is caused by low self-awareness from the self-cognitive process. Rothblum *et al.* (1986) found a strong negative link between procrastinating and subpar academic performance. San *et al.* (2016) and Zarei & Khoshouei (2016) carried out this meta-analysis and showed a significantly negative correlation between metacognition and passive procrastination, but not with active procrastination. It seems metacognition is more important in lowering passive procrastination than active procrastination, but it is less successful in changing the latter tendency. The relationship between decisional procrastination and metacognitive attitudes regarding procrastination was examined by Palo, Monacis, and Sinatra (2019), and results showed that procrastination-related positive metacognitive beliefs had a negative effect on interests and concentration; decisional procrastination and positive metacognitions were mediated by concentration. The findings gave rise to an investigation into procrastination as a hindrance to academic achievement. So, it can be expected that the presence of maladaptive metacognitions may lead to higher procrastination.

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