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Academic Procrastination and Anxiety: Examining the Mediating Role of Self-Efficacy among College Students

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Abstract

Most students delay their work sometimes, but for many college students this delay becomes a regular pattern that harms their studies. This paper looks at academic procrastination and anxiety among college students, and asks how much of this link runs through self-efficacy, which means a student's own belief in their ability to complete academic work well. Based on Bandura's self-efficacy theory and recent research, this paper argues that anxious students procrastinate more partly because their anxiety lowers their belief in their own ability. This lower belief then makes procrastination more likely. The paper reviews strong evidence for this pattern, including a 2026 study of 3,370 Chinese college students, a controlled trial that raised student self-efficacy directly, and several Indian studies on the same topic. Based on this evidence, the paper builds a conceptual model with four hypotheses and discusses what this means for colleges, teachers, and students. The paper argues that reducing procrastination needs more than time-management tips. Colleges should also work directly on building student self-efficacy, through real practice, encouragement, and support from peers.

Keywords: *Academic Procrastination, Anxiety, Self-Efficacy, Mediation, College Students, Educational Psychology*

Introduction

Nearly every student puts off a task now and then, and on its own that is not much of a problem. What this paper is interested in is the pattern that does not stop there: the assignment that keeps getting pushed to tomorrow even though the student can see, clearly, that pushing it off is making things worse. Steel (2007) put a number on how widespread this stubborn version of the habit really is, with some estimates placing it at 80 to 95 percent of undergraduates. His review also shifted how procrastination gets explained. Rather than a scheduling weakness, it is treated as a failure of self-regulation: a gap between what a student plans to do and what the student actually ends up doing. Anxiety sits close to the centre of this gap. When a task feels too hard, too important, or too easy to fail at, students often avoid it. Sirois and Pychyl (2013) gave this avoidance a clear name: short-term mood regulation. Procrastination gives quick relief from a bad feeling, but this relief comes at a cost. The task and its stress return later, often closer to the deadline and harder to manage. In this way, anxiety leads to procrastination, and procrastination then adds to anxiety again. This paper looks at a third factor that may connect the two: self-efficacy, which means a student's own belief in their ability to complete a task well. Bandura (1997) explained that this belief shapes how a person thinks, feels, and acts when facing a hard task. A student with low self-efficacy is more likely to delay a task, not because the task is harder for them, but because they do not believe they can complete it successfully. This paper asks how much of the anxiety-procrastination link runs through this lowered belief, and what this means for colleges trying to help students procrastinate less.

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Review of Literature

Steel's (2007) review remains the main starting point for later research on this topic. It brought together many smaller studies and placed procrastination firmly under self-regulatory failure, linking it to low self-control and low self-efficacy on one side, and to poor grades and higher stress on the other side. Most later studies, including this paper, build on this starting point rather than question it again. Sirois and Pychyl (2013) added an important piece to this picture. Their short-term mood regulation theory explains why self-regulation fails in this specific direction. When a task creates a bad feeling, people often deal with the feeling by avoiding the task, instead of working through the feeling directly. This choice feels sensible at the time, but the task usually comes back later in a harder, more stressful form. The strongest recent evidence for a self-efficacy pathway comes from a large 2026 study of 3,370 Chinese college students (Fan et al., 2026). This study measured trait anxiety, academic self-efficacy, autonomous learning motivation, and procrastination together, and used formal mediation analysis rather than simple correlation. Trait anxiety was positively linked to procrastination, and self-efficacy was negatively linked to both anxiety and procrastination. When self-efficacy was added to the model as a mediator, part of anxiety's effect on procrastination was explained through it. However, anxiety also kept a direct effect on procrastination even after self-efficacy was included, showing that self-efficacy explains part of this link, but not all of it. A related study by Ye, Chi, Ma, and Pan (2025), based on 612 Chinese college students, found that unmet psychological needs led to higher procrastination through two steps. Unmet needs raised anxiety, and this anxiety then lowered self-control, which increased procrastination. Self-control is not the same as self-efficacy, but this finding matches the general pattern from Fan et al. (2026): anxiety rarely leads straight to procrastination. It usually works through some inner resource, such as self-control or self-efficacy, becoming weaker first.

Zhang, Dong, Fang, Chai, Mei, and Fan (2018) studied undergraduate students in health profession courses. They found that self-efficacy for self-regulation, together with fear of failure, explained part of the link between self-esteem and academic procrastination. This study used self-esteem rather than anxiety as its starting point, but fear of failure is closely connected to anxious feelings about academic work, so the finding still supports the central role of self-efficacy. None of these studies alone can prove that self-efficacy actually causes lower procrastination, since correlation alone cannot answer that question. Krispenz, Gort, Schültke, and Dickhäuser (2019) came closer to an answer with a real controlled trial. University students worked through a structured method to examine their worry thoughts about a feared exam. Students who completed this method showed lower test anxiety and less later procrastination than a waitlist control group, and part of this improvement came from a real rise in their self-efficacy. This small pilot study gives the strongest evidence in this review that self-efficacy can actually be changed on purpose, and that changing it changes procrastination too. Self-efficacy's role is not limited to anxiety-focused studies. Ren, Liu, Feng, Li, Sun, and Qiu (2021) studied 687 Chinese college students and found that students with higher physical activity levels reported higher self-efficacy and lower procrastination, and that self-efficacy explained part of this link. Physical activity may seem like an unusual variable in a procrastination study, but it fits the same overall pattern: anything that raises a student's confidence in their own ability seems to lower how much they delay their work.

Emotional factors beyond anxiety also seem to matter. Rad, Bordbar, Bahmaei, Vejdani, and Yusefi (2025) studied 290 university students in Iran and found that both low self-efficacy and difficulty managing emotions strongly predicted higher academic procrastination. This adds further support to the idea that self-efficacy works alongside other emotional factors, and not entirely on its own, in shaping how much a student procrastinates. India's research on this exact topic is smaller in scale, but points in the same direction. Pradhan, Didwania, Arun, and Sharma (2018) linked self-efficacy to both anxiety and procrastination among Indian undergraduate students, alongside parenting style and locus of control. Shine and Lokesh (2023) found that perceived stress and self-efficacy both strongly affected procrastination among Indian undergraduate and postgraduate students. Govindan, Kaliaperumal, Arulmozhi, and Priya (2024), studying 347 graduate students in Puducherry, described anxiety and procrastination as feeding into each other over time. A closely related study by Bishmi and Anto (2024), working with Indian high school students rather than college students, reported a strong negative correlation between procrastination and academic self-efficacy, suggesting that this pattern may already be visible before students even reach college. None of these Indian studies match the size of Fan et al.'s sample, but together they show that this pattern is not limited to Chinese classrooms alone.

Theoretical Framework

This paper rests on three main ideas.

Bandura's Self-Efficacy Theory (1997)

Bandura (1997) explained that self-efficacy comes from four main sources. Mastery experience means succeeding at a similar task before. Vicarious experience means watching someone else succeed. Verbal persuasion means encouragement from other people. Physiological and emotional states mean how a person's body and feelings respond while facing the task. This fourth source matters most for this paper. When a student feels anxious, this uncomfortable feeling can

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itself lower the student's belief in their own ability, even when their real skill has not changed at all. In this way, anxiety can directly damage self-efficacy, and this damage then affects behaviour, including the habit of delaying academic work. Self-efficacy is usually measured through tools such as the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), which several of the studies reviewed in this paper have used.

Spielberger's Trait and State Anxiety (1983)

Spielberger, Gorsuch, and Lushene (1983) made an important difference between trait anxiety and state anxiety. Trait anxiety is a stable personal tendency to feel anxious in many situations. State anxiety is a short feeling of anxiety tied to one specific moment, such as before a single exam. Most large mediation studies discussed in this paper, including Fan et al. (2026), focus on trait anxiety, since it is easier to measure reliably and link to long-term behaviour patterns such as habitual procrastination.

Procrastination as Self-Regulatory Failure and Mood Regulation

Steel's (2007) view of procrastination as self-regulatory failure fits well with the short-term mood regulation theory from Sirois and Pychyl (2013). Self-regulation needs some confidence that effort will actually work. When self-efficacy is low, self-regulation becomes harder, and avoiding the task, through procrastination, becomes an easier short-term choice, especially when the task is linked to uncomfortable feelings such as anxiety.

Together, these three ideas support the model used in this paper. Anxiety is treated as a feeling that can weaken self-efficacy, following Bandura (1997). Weaker self-efficacy then makes self-regulation harder, following Steel (2007). Harder self-regulation then raises the chance of procrastination as a short-term escape from discomfort, following Sirois and Pychyl (2013).

Conceptual Model and Hypotheses

Based on the literature and theory above, this paper proposes a mediation model where self-efficacy explains part of the link between anxiety and academic procrastination. Anxiety is the independent variable, academic procrastination is the dependent variable, and self-efficacy is the mediating variable. The following hypotheses follow from this model:

1. **H1.** Anxiety is positively related to academic procrastination among college students.
2. **H2.** Anxiety is negatively related to self-efficacy among college students.
3. **H3.** Self-efficacy is negatively related to academic procrastination among college students.
4. **H4.** Self-efficacy mediates the relationship between anxiety and academic procrastination among college students.

Objectives of the Study

This paper has the following objectives:

1. To examine the relationship between anxiety and academic procrastination among college students.
2. To examine the relationship between anxiety and self-efficacy among college students.
3. To examine the relationship between self-efficacy and academic procrastination among college students.
4. To review existing empirical evidence on the mediating role of self-efficacy between anxiety and academic procrastination.
5. To propose practical recommendations for reducing academic procrastination through self-efficacy-based interventions.

Significance of the Study

This study can help several groups of people. College counsellors get a clear reminder that treating procrastination and treating anxiety may need to happen together, and not as two separate problems. Teachers get a possible reason why some anxious students appear unmotivated, when the real issue may be low self-belief rather than laziness. Students get a different way to see their own procrastination, less as a personal weakness and more as an emotional pattern with a clear cause that can be worked on. Researchers, especially in India, get a clear picture of where the current evidence is thin and where future research could add real value.

Research Methodology

This paper uses a descriptive-analytical method based only on secondary data. No students were surveyed or tested for this paper. Instead, the paper reviews peer-reviewed journal articles on academic procrastination, anxiety, and self-efficacy, giving special attention to studies that used formal mediation analysis or ran a real intervention, rather than only reporting correlations. Sources were found through academic databases and journal websites, and were chosen based on how closely they matched the three central variables of this paper. The review gives extra weight to large-sample studies and Indian studies, so that the argument rests on both international and local evidence. Based on this literature, a conceptual mediation model is proposed rather than tested with new data. Every number used in this paper comes from the cited published studies, not from new data collected here.

Understanding the Core Concepts: Procrastination, Anxiety, and Self-Efficacy

Three terms need clear definition before going further. Academic procrastination means the voluntary delay of an intended academic action, even though the person expects this delay to cause a worse result (Steel, 2007). It is different from simply choosing to do a task later for a good reason. Procrastination involves a clear gap between intention and action that the person themselves recognises as unhelpful. Anxiety, in this

paper, means feelings of worry, tension, and fear connected to academic performance or evaluation. This paper focuses mainly on trait anxiety, a stable tendency to feel anxious across many academic situations, rather than state anxiety, which is tied to one single event such as one exam (Spielberger et al., 1983).

Self-efficacy, following Bandura (1997), means a person's belief in their own ability to plan and carry out the actions needed to reach a specific academic goal. It is not the same as actual skill. Two students with similar academic ability can hold very different levels of self-efficacy, and this difference in belief, more than any difference in real skill, strongly shapes how often each student procrastinates. A simple example makes this clear. Two students face the same difficult assignment, with equal real ability. The first student has completed similar assignments successfully before, so this student expects success and starts working early. The second student feels anxious about the assignment and doubts her own ability, even though her actual skill is just as strong. This second student is more likely to delay the work, not because the task is harder for her, but because her belief in her own ability is weaker. This gap between real skill and self-belief is exactly what self-efficacy theory, and the mediation model in this paper, tries to explain.

The Mediating Role of Self-Efficacy: Synthesis of Evidence

The evidence reviewed in this paper points to a clear and steady pattern. Anxiety and academic procrastination move together in a positive direction; students who report more anxiety generally report more procrastination too. At the same time, self-efficacy moves in the opposite direction against both; students with stronger belief in their own ability tend to feel less anxious and to procrastinate less. The mediation analysis by Fan et al. (2026) gives the clearest numerical support for the model proposed in this paper. In their study of 3,370 college students, trait anxiety significantly predicted academic procrastination. When academic self-efficacy was added as a mediator, part of anxiety's effect on procrastination passed through self-efficacy, while a separate direct effect of anxiety on procrastination also remained. In simple words, part of the reason anxious students procrastinate more is that their anxiety weakens their belief in their own ability, and this weaker belief then leads to more delay. Anxiety also seems to affect procrastination through other paths not fully explained by self-efficacy alone, and the emotional regulation evidence from Rad et al. (2025) supports this same point.

The intervention evidence from Krispenz et al. (2019) adds further strength to this model. Because their study actually changed students' self-efficacy through a planned method, rather than simply measuring it as it naturally stood, the resulting drop in test anxiety and procrastination gives stronger support for a real, causal link running from self-efficacy toward these outcomes, and not only a link that happens to travel alongside them. This pattern is usually called partial mediation, and it is a more realistic finding than a model where self-efficacy explains everything. Procrastination is shaped by many factors beyond self-efficacy, including task type, time management skill, and outside pressure. Still, the steady finding that self-efficacy plays a real, though partial, mediating role, across different samples, different countries, and even a controlled trial, gives strong support to hypothesis 4 of this paper.

Factors That Influence This Relationship

A few other factors appear to strengthen or weaken this pathway. Fan et al. (2026) found that students with weak autonomous learning motivation, meaning their interest in learning comes mainly from outside pressure rather than genuine interest, felt a stronger drop in self-efficacy when anxious, compared to students with stronger inner motivation. This suggests that building genuine interest in a subject may help protect students from some of the damage anxiety can cause. Lifestyle habits matter too. Ren et al. (2021) found that physically active students reported both higher self-efficacy and lower procrastination, suggesting that habits outside the classroom, such as regular exercise, may support the same inner resource that protects against procrastination. Family-related factors show a smaller effect. Fan et al. (2026) found that family income had a small but real link to both self-efficacy and procrastination, and that class ranking was also linked to procrastination. These findings show that wider lifestyle and family context, and not only individual psychology, plays some part in shaping procrastination, though the anxiety-self-efficacy pathway remains the central focus of this paper.

Evidence from Indian College Students

The Indian evidence covered earlier is worth a closer look, not to repeat it, but to see what it shows as a group. Four separate studies, from four different Indian settings, each looked at a different specific angle: parenting style and locus of control among undergraduates (Pradhan et al., 2018), perceived stress across undergraduate and postgraduate students (Shine & Lokesh, 2023), the anxiety-procrastination cycle among graduate students in Puducherry (Govindan et al., 2024), and the same self-efficacy-procrastination link one step earlier, among high school students (Bishmi & Anto, 2024). All four point toward self-efficacy, or something very close to it, as part of the explanation, and the fact that the pattern shows up even before students enter college hints that the habits behind it may form early and simply carry forward. This agreement across separate research teams and separate samples is a stronger signal than any single study could give alone, even though each Indian sample is far smaller than Fan et al.'s 3,370 students. What Indian research still lacks is a large college-level study built specifically to test this exact mediation model using

formal mediation analysis, rather than the simple correlations most Indian studies on this topic have relied on so far. Closing that gap is probably the clearest next step for research in this area.

Scope and Limitations of the Study

This paper stays within a clear, narrow scope on purpose. It focuses only on anxiety, self-efficacy, and academic procrastination among college and university students, and not on school-age children or working adults, though some findings may still apply more widely. This paper focuses mainly on trait anxiety rather than state anxiety, and on academic self-efficacy specifically rather than general self-belief. As already explained in the methodology, this paper rests entirely on secondary data from published studies. It does not include new data collection, so it cannot report new statistically tested results specific to any one college or country beyond what the cited studies already report. The Indian evidence reviewed here, while supportive, is smaller in scale compared to the large Chinese studies this paper leans on, and a bigger Indian study would help confirm these findings more strongly.

Discussion

The evidence gathered in this paper supports a fairly clear model: anxiety raises academic procrastination partly by lowering self-efficacy. This matches Bandura's (1997) theory closely, since his theory already treats emotional and physical states as one of the four main sources of self-efficacy. When a student feels ongoing academic anxiety, this feeling does not stay separate from the student's sense of competence. It actively lowers that sense of competence. This has a clear practical meaning. Many procrastination programmes focus only on time-management skills, such as making schedules or breaking tasks into smaller steps. These steps are useful, but they may not fully solve the problem if the real issue is a student's damaged belief in their own ability. Based on the evidence reviewed here, good interventions should also work directly on rebuilding self-efficacy, alongside managing anxiety and improving time management. The Krispenz et al. (2019) trial and the Ren et al. (2021) study both show that self-efficacy can be raised through fairly simple means, whether through structured cognitive exercises or regular physical activity, and that this rise is linked to real drops in procrastination. It is worth repeating that self-efficacy explains only part, and not all, of the anxiety-procrastination link in the strongest study reviewed here (Fan et al., 2026). Rad et al. (2025) point toward one likely reason: difficulty managing emotions also predicts procrastination strongly, alongside low self-efficacy. Future research, including research from India, would benefit from studying self-efficacy and emotional regulation together, to build a fuller picture of why anxious students procrastinate.

Practical Implications and Recommendations

Based on the discussion above, the following recommendations are suggested:

1. Colleges should give students real, structured chances to succeed early and often, since mastery experience is the strongest source of self-efficacy identified by Bandura (1997).
2. Counselling services should treat procrastination and anxiety together, rather than as two separate problems, given the strong and steady link found between them across the studies reviewed.
3. Teachers should give specific, encouraging feedback that names a student's real growing skill, since verbal persuasion works as a source of self-efficacy only when it feels genuine and specific.
4. Peer mentoring or study groups should be set up on purpose, since watching a capable peer succeed at a similar task, known as vicarious experience, can help build self-efficacy in anxious students.
5. Institutions should try structured programmes based on the cognitive method used by Krispenz et al. (2019), alongside existing time-management workshops, for students who show high levels of academic procrastination.
6. Colleges could encourage regular physical activity as a simple, low-cost way to support student self-efficacy, based on the pattern found by Ren et al. (2021), alongside more direct academic support.
7. Support programmes should also include basic emotional regulation skills, given the strong link found by Rad et al. (2025), rather than focusing on self-efficacy alone.
8. Future Indian studies should use larger samples and formal mediation analysis, similar to Fan et al. (2026), to confirm and refine these findings within the Indian higher education context.

Conclusion

The question this paper set out with was fairly narrow: how much of the well-known link between anxiety and academic procrastination actually runs through self-efficacy. Working from Bandura's theory and a spread of recent research, a very large Chinese study, a real controlled trial, and a small but growing cluster of Indian studies among them, the answer that comes back is: a genuine share of it, though clearly not all. Anxiety seems to wear down a student's belief in their own ability, and that worn-down belief is what then makes procrastination more likely. Time-management advice alone was probably never going to close this gap, given how much of it runs through belief rather than scheduling. What looks more promising is building self-efficacy on purpose, through real success, honest encouragement, supportive peers, ordinary habits such as regular exercise, and some basic skill in managing emotion, alongside whatever anxiety-specific help a student is already receiving. Indian research on this exact pathway is still thin, and a larger, purpose-

built study remains the most useful next step anyone in this field could take.

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There are no conflicts of interest.

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