

Mediating Effect of Academic Self-efficacy on the Relationship between Academic Stress and Academic Burnout of Online Class Students during the COVID-19 Pandemic in Davao Region

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Abstract— The purpose of this study was to look into the mediating effect of self-efficacy on the relationship of academic stress and academic burnout of online class students during COVID-19 Pandemic. The study employed a non-experimental design utilizing the descriptive-correlation and mediation technique. The researcher-made questionnaire was used as an instrument to collect data which were pilot tested and assessed through Cronbach's alpha in order to test its validity and reliability. There were a total of 307 respondents who are the online students enrolled in the different Universities in Davao Region, and was selected through random sampling. The result reveals that the online class students in Davao Region perceived high level of academic stress, moderate level of academic burnout, and moderate level of self-efficacy. The results also confirm the significant relationship of academic stress and academic burnout of online class students in Davao Region. Similarly, there is a significant relationship between academic stress and academic self-efficacy and finally a significant relationship between academic self-efficacy and academic burnout. Moreover, the result of the study also suggests that academic self-efficacy significantly mediates the relationship between academic stress and academic burnout of online class student in Davao Region.

Keywords— self-efficacy, academic stress, academic burnout, online class students, Davao Region, Philippines.

I. INTRODUCTION

The COVID-19 pandemic has brought a drastic change in schools across the world. Over 1.2 billion students are affected on lockdown (Li & Laani, 2020). The educational systems across all levels have shifted into distance learning and digital platforms (Lokanat, Guptab & Shreeb 2020). In adult learning, the traditional face-to-face classroom shifted into the online classroom, resulting in a challenge for students to pursue digital skills and internet accessibility (Scarpetta & Quintini, 2020). School's online platforms have become essential. Unfortunately, due to this immediate need for virtual learning, some students may experience anxiety and experience fatigue from online video conferencing—commonly referred to as "zoom fatigue external icon (CDC, 2020).

According to Alsulami et al. (2018), academic stress is a response in our body to academic demands. It usually affects 10-30 percent of the student's experience in their academic career. According to a study by American College Association (2006), academic stress is one of higher education students'

most significant health obstacles. The majority of the stressors among the students are oral presentations, too many academic loads, and taking examinations. Most students and distance education students experience some form of stress and are no exception, especially adjusting to new situations in their learning environment.

Most recently, one of the factors that affect performance in academics is burnout. Burnout is defined as a mental state or exhaustion related to distress. According to Zhang et al. (2007), burnout among college students refers to tiredness from academic demands, lack of interest in academic tasks, and student incompetency. Evidence shows that burnout results in a lack of interest in studies and a sense of meaningless educational activities.

It is in the above context that the researchers would like to conduct a study on how academic stress, academic burnout, and academic self-efficacy relate to each other. In addition, this study examined whether academic self-efficacy can mediate the relationship between academic stress and academic burnout of students having online classes during the COVID 19 pandemic. The results of this study will not only provide information to more fully understand the relationships among academic stress, academic self-efficacy, and academic burnout of students having online classes during COVID 19 pandemic but also help to develop stress-prevention or reduction strategies and intervention programs for academic stress and self-efficacy of college students.

Research Objective

This study aimed to examine the mediating effect of self-efficacy in response to the relationship between academic stress and academic burnout of online class students during the COVID-19 Pandemic. Specifically, this study sought to answer the following objectives:

1. To ascertain the level of academic stress of students conducting online classes in terms of the following:
 - 1.1 academic achievement,
 - 1.2 stress related to tests,
 - 1.3 attending the class,
 - 1.4 stress related to studying, and
 - 1.5 concerns over future career.

2. To ascertain the level of academic burnout of students conducting online classes in terms of the following:
 - 2.1 emotional exhaustion,
 - 2.2 incompetence,
 - 2.3 antipathy to study,
 - 2.4 cynicism and
 - 2.5 anxiety
3. To determine the significant relationship between:
 - 3.1 academic stress and academic burnout,
 - 3.2 self-efficacy and academic burnout and
 - 3.3 self-efficacy and academic stress
4. To determine the mediating effect of academic self-efficacy on the relationship between academic stress and academic burnout of online class students

Hypothesis

The following null hypotheses were formulated at 0.05 level of significance.

1. There is no significant relationship between academic stress and academic burnout
2. There is no significant relationship between self-efficacy and academic burnout
3. There is no significant relationship between self-efficacy and academic stress and
4. Self-efficacy has no significant mediating effect between academic stress and academic burnout of online class students.

Review of Related Literature

Implementing new ideas, and strategies in a workplace can be difficult because of the beliefs and attitudes of the people working in that given place (DiMattia et al., 1987). Adopting new technology while teaching can also affect the success of students and educational institutions (Al Meajel & Sharadgah, 2018). At King Saud University (KS

The section contains the study of books, research, publications, magazines, journals, newspapers, and other reliable resources from the internet which support the analysis of Academic Stress with its indicators: *academic achievement, stress related to tests, attending the class, stress related to studying, and concerns over future career* (Oh and Chan, 1994). Also presented are the related studies on Academic Self-Efficacy with its indicators: *preference of task difficulty, self-regulated efficacy, and self-confidence in individual ability* (Kim and Park, 2001). Lastly, this section also presents the discussion of related literature appertaining to Academic Burnout with its indicators: *emotional exhaustion, incompetence, antipathy to study, cynicism, and anxiety* (Lee and Colleagues, 2009).

Academic Stress

Academic life is a significant part of each person's life that significantly influences other aspects of their lives. Despite this importance, online students have experienced difficulties in online classes (Alarcon et al., 2011). Numerous challenges students have faced in achieving their educational goals are in their educational lives and the education system (Stallman, 2010). When people enter an academic environment, they have to go through a high-pressure period due to multiple factors. On

the other hand, attending university classes brings about positive experiences for many students. However, some educational materials, such as tests, assignments, and presentations, among others., cause academic burnout for other students (Rastega, Zare, Sarmaddi, & Hosseini, 2013). As such, academic stress has been detrimental to a student's learning (Lin & Huang, 2013). This student discernment results in their resistance and an unwillingness to the online-blended learning approach (Baloran, 2020). As such, academic stress consists of *academic achievement, stress related to tests, attending the class, stress related to studying, and concerns over future careers* (Oh and Chan (1994).

Further, the COVID-19 pandemic brought increasing global concerns about the students' mental health (Roy, D., Tripathy, S., Kar, S., Sharma, N., Verma, S., & Kaushal, V. (2020). In recent studies, it was observed that the level of academic stress and academic burnout in some countries is at a high level, which results in student dropout (Stallman, 2010; Deary et al., 2003; Weckwerth & Flynn, 2006). These stresses are linked with examinations. They found that complex tests cause high academic stress and heavy classroom assignments (Shirom, 1986). Besides, a lot of workloads, irregular school timings, unavailability of lecturer-student relationship, unbalanced school work, teaching methodology, curriculum, and syllabus are most surplus to requirements (Masih & Gulrez, 2006)

Another factor is the curriculum and syllabus that often require additional requirements with many workloads, resulting in unbalanced school timings and even the unavailability of professor-student relationships, unsteady school work, teaching methodology, and others (Masih & Gulrez, 2006). Besides, academic workload, attending lectures, examinations, school syllabus, insufficient educational materials (Agolla & Ongori, 2009), and subject-related projects (Conner et al., 2010) revealed the causes of academic stress in higher education. Academic stress includes the absence of time management (Macan et al., 1990), the responsibility to come across the targets of assessments, setting accurate academic goals (Misra et al., 2000), high competitiveness among co-students, and information overload (Sinha et al., 2001), overloaded lecture rooms, and insufficient resources to perform academic work (Agolla & Ongori, 2009; Awino & Agolla, 2008). Also, a student's family plays a prominent role in academic stress. It embraces the pressure mounted on the students by their parents to accomplish well intellectually. Parents need to boost their children to devote much time to studying to achieve high grades in examinations (Deb et al., 2011).

Earlier studies regarding mental health during the COVID-19 pandemic have deliberate overall populace in other regions of the world (Xiang, Yang, Li, Zhang, Zhang, Cheung, et al., 2019). The outbreak of the virus and the implementation of sudden control measures caused excessive fear and social isolation, while the lack of infectious disease knowledge can foster widespread panic (Aparado, 2020). The novelty of the virus itself and the unpredictability and uncertainty when the situation will be entirely controlled have put people under excessive stress, mostly when face-to-face social interactions are lost. This stress is not only limited to physical and social but also mental and academic focus. Even though the teachers had

already been involved in digital learning, adjustments, relearning, and knowledge engagement were made (Alateeq, Aljhani, Aleesa, 2020).

Before starting the classes, several webinars and training for using various digital learning tools were also done for the teachers' sake. Similarly, students were given the option to enroll, whether fully online, blended learning, or remote learning. They were also allowed to enroll, depending on their current status and learning availability. However, not every school is as lucky and ready (Toquero, 2020). Most of the Philippines, predominantly rural communities, were surprised by these online classes and remote learning. As the problems with gadget provision and internet access continually exist, the psychological struggle of the students is also one of the concerns (Lee et al., 2003).

On the other hand, the advent of the online class was evident in other countries and contrary to the popular belief that online education is a new phenomenon (Jasmine & Felicia, 2019). With this technological advancement, students can learn in their comfort zone anywhere at any time (Wladis et al., 2015). However, academic stress-related stress continues to exist, even in the new learning modalities. This ongoing stress is a significant concern for secondary and tertiary students (Pascoe, Hetrick, & Parker, 2019). As such, this study intends to examine academic stress, which consists of five subscales: (1) academic achievement, (2) stress-related to tests, (3) attending the class, (4) stress-related to study, and (5) concerns over future career (Oh and Chan, 1994).

Related studies on academic stress suggested that cognitive restructuring techniques significantly decreased students' anxiety with the test and improved their post-treatment test performance (Steinmayr, Crede, McElvany & Wirthwein, 2016). Students in college face a wide range of ongoing normative stressors, which can be typical day-to-day hassles such as constant academic demands (Pascoe, Hetrick, & Parker, 2019). For many students, the most significant source of stress is examinations. A student has to shuffle through examinations, assignments, and many other activities. The design, teachers, and parents also burden the students with much pressure to get good grades. Parents' expectations make the students work relentlessly and create more stress (Jain & Singhai, 2018).

In summary, academic achievement and subjective well-being (SWB) play a significant role in people's lives. Academic achievement is vital as it powerfully shapes a person's life chances, and SWB impacts essential variables such as basic psychological needs (Steinmayr et al., 2014). Also, attendance at meetings or sessions positively affects students' academic performance, so a mandatory attendance policy is essential (Fadellmoula, 2018). Lastly, internal motivation and family work management were identified as the crucial decreasing factors of academic burnout. Therefore, promoting academic motivation; recognizing and applying the skills of family-work management; and recognizing the factors affecting stress, motivation, self-efficacy, and academic performance cause students to be protected against academic burnout (Sharifard, F. and Asayesh, H., Haji, M., Hosseini, M. & Sepahvandi, M., 2020) The section contains the study of books, research, publications, magazines, journals, newspapers, and other

reliable resources from the internet which support the analysis of Academic Stress with its indicators: *academic achievement, stress related to tests, attending the class, stress related to studying, and concerns over future career* (Oh and Chan, 1994). Also presented are the related studies on Academic Self-Efficacy with its indicators: *preference of task difficulty, self-regulated efficacy, and self-confidence in individual ability* (Kim & Park, 2001). Lastly, this section also presents the discussion of related literature appertaining to Academic Burnout with its indicators: *emotional exhaustion, incompetence, antipathy to study, cynicism, and anxiety* (Lee and Colleagues, 2009).

Academic Burnout

The COVID 19 pandemic has changed the workplace setting upon the lockdown period. The educational system has shifted to remote working, and there is an increased usage of telecommunication. This sudden change led to a syndrome called burnout. Over the past years, many studies have led to burnout in the workplace and education (Schaufeli, W. B., Bakker, A. B., Hoogduin, K., Schaap, C., & Kladler, A., 2001). However, exploring academic stress and academic burnout in the prevalence of online classes is lacking.

Further, *academic burnout* is defined as the student's difficulties in learning or stress due to their courses or other psychological factors. Students who suffer academic burnout frequently display a state of sensitive fatigue, a tendency to depersonalization, and a feeling of low personal achievement (Yang, 2014). The standard tool used to measure burnout is the Korean Academic Burnout Inventory (KABI), which originated from the Maslach Burnout Scale-Student Survey, a modified version of the Maslach Burnout Inventory. This survey consists of five subscales: *emotional exhaustion, incompetence, antipathy to study, cynicism, and anxiety* (Schaufeli et al., 2002).

Academically, students were engaged in structured, coercive activities such as attending classes and completing assignments directed towards a specific goal like passing their exams; frequently, they also experienced burnout. It manifests itself in a feeling of exhaustion because of study demands, having a cynical and detached attitude towards one's study, and feeling incompetent as a student (McCarthy et al., 1990; Meier & Schmeck, 1985). Several studies on stress in academic life have considered students a kind of employees. It revealed that students with positive study habits and strong self-efficacy also have high school engagement (Chambel & Curral, 2005). Further, the study mentioned above determined that students' self-efficacy beliefs, study habits, and academic success are essential. For instance, a cognitive-behavioral intervention program virtually affects university students' self-efficacy belief, school engagement, and academic performance, and alterations in students' tasks and responsibilities, sufficient in-class management, positive peer relations, and supportive teachers can increase school engagement (Bresó, Schaufeli, & Salanova, 2011; Fredrick, 2011). Intervention programs for at-risk high school students can be designed using this and similar studies Schaufeli, W. B., Bakker, A. B., Hoogduin, K., Schaap, C., & Kladler, A. (2001).

Another classical definition of academic burnout was composed of factors such as emotional exhaustion, depersonalization, cynicism, and inadequacy. Students, overwhelmed by school requirements and cynical attitudes, felt detached from the school environment and reduced personal accomplishment. They can also be seen to have a lack of confidence in school. Likewise, emotional exhaustion is akin to disengagement, lack of energy, or desire to participate in any work/school activities. Secondly, depersonalization pertains to resentment and other negative emotions towards coworkers or co-students. Diminished personal accomplishment is the same as reduced productivity. When a person is emotionally exhausted and experiencing depersonalization, he/she is unlikely to contribute to an optimal level. (Charkhabi, M., Abarghuei, M. A., & Hayati, D., 2013). Lastly, cynicism refers to an individual's cynical attitude toward work, which leads to detached feelings towards their job (Leiter & Maslach, 2003). Nevertheless, inadequacy refers to the individual surface incompetent at the job, often accompanied by reduced productivity and dissatisfaction with their work achievements (Leiter & Maslach, 2003).

Furthermore, academic burnout is associated with various adverse consequences including poor educational outcomes, increased psychological distress, reduced life satisfaction, and sleep deprivation (e.g., May, Bauer & Fincham, 2015; Mazurkiewicz et al., 2011; Salmela-Aro & Upadaya, 2014). Several studies indicated that academic burnout harms students' efficacy as well, which is a barrier to their academic achievements (Charkhabi M, Azizi Abarghuei M, Hayati D, 2013; Wang M, Guan H, Li Y, Xing C, Rui B., 2019; Aguayo R, Cañadas GR, Assbaa-Kaddouri L, Cañadas-De la Fuente GA, Ramírez-Baena L, Ortega-Campos E., 2019). Burnout is understood to have many adverse consequences for students; however, several equivocal findings in the literature mean that it is currently unclear to what extent burnout affects academic achievement. The results suggest that burnout leads to worse academic achievement in school, college, and university (Madigan, D.J., Curran, 2020). In addition, it can cause psychological disorders, including anxiety, depression, frustration, hostility, and fear in students (Azizzadeh Forouzi M., Shahmohammadipour P., Heidarzadeh A., Dehghan L., Taheri Z., 2016) and it affects the interactions between students and faculty members and staffs and can reduce the students' interest in education (Charkhabi, M., Abarghuei, M. A., & Hayati, D., 2013).

Burnout has been widely studied and explored in different areas (Maslach & Leiter, 2016). It is a phenomenon in which students hold a negative attitude to curriculum learning, which manifests in physiology, psychology, behavior, and interpersonal communication (XU, 2017). Given that academic burnout is highly prevalent among university students, it is essential to reduce academic burnout. Burnout generally arises in response to chronic stress in the workplace. Undoubtedly, burnout takes a significant toll on those who experience it and those around them. For the individual, burnout can lead to dissatisfaction with work and life. It impacts the individual's ability to remain motivated, engaged, and productive. Those experiencing burnout have higher rates of absenteeism and

turnover. They are prone to feelings of failure and depression (Kristanto, Chen & Thoo, 2016; Mazurkiewicz et al., 2011).

Correlation Between Measures

There is a positive relationship between academic stress and academic burnout. Academic self-efficacy intermediated the relationship between academic stress and academic burnout. Thus, improving academic self-efficacy is crucial for preventing and reducing symptoms of academic stress and academic burnout. In this regard, continuous social support and efforts are needed to develop instructional strategies and educational programs to improve students' academic self-efficacy (Yoon, Y., & Jung, I., 2014). Several researchers investigated the relationship between academic burnout and physical and physiological states (Cherniss, 1992; Hallsten, 1993; Hobfoll & Freedy, 1993). They demonstrated that people who did not have a sense of self-efficacy lost their capacity to adapt. The social-cognitive theory was applied to determine the concept of self-efficacy.

When examining the relationship between academic burnout and self-efficacy, it was revealed that academic burnout was significantly and negatively related to academic self-efficacy (Bandura, 1977). It was demonstrated that academic stress was positively and negatively correlated with academic self-efficacy beliefs (Yucha, Kowalski, and Cross, 2015); Akin (2016), and Shokri et al. (2007). Another study proved that students with a sense of self-efficacy overcame obstacles related to perceived stressful factors during their research (Luzzo & McWhirter, 2015). Additionally, self-efficacy negatively impacted the stress perceived by university students (Akin, 2016).

In order to develop a sense of calmness in the face of challenging assignments and activities, high self-efficacy aids people in effectively dealing with their educational issues. In contrast, people with low self-efficacy may believe every case is more complex than they can solve. This belief may increase stress, burnout, and problem-solving inefficiency (Yang, 2015). Further, Academic burnout was significantly and negatively associated with academic self-efficacy in such a way that an increase in academic burnout decreased academic self-efficacy. Similarly, self-efficacy and job satisfaction were significantly related to commitment and self-efficacy and diversely associated with burnout (Yoon, Y.-J., & Jung, I.-K., 2014).

Moreover, the examined relationship between self-efficacy and burnout among physicians showed that those with low self-efficacy encountered more difficulties in controlling their behaviors and performance and were more vulnerable (Huang et al., 2012). The students' academic self-efficacy also correlated with their academic burnout; this was a statistically and significantly negative influence. In other words, as their academic self-efficacy increased, it was possible to lower their academic burnout. (Chiu, 2014; Min, 2011; Oh & Seon, 2013; Park, 2011).

Lastly, the study of (Hossein J., Naser N., & Hamideh S., 2017) on the relationship between academic burnout and academic stress with academic self-efficacy as a moderating variable revealed that academic burnout was significantly related to academic self-efficacy among the students. When the

academic burnout among the students increases, academic self-efficacy decreases. On the other hand, an increase in academic stress among the students decreases their self-efficacy. Considering the consequences of academic burnout on students, mainly regarding mental and physical health and academic achievements, detecting the associated factors is essential to implementing prevention programs and better managing educational plans (Reinke, W. M., & Hall, C., 2003).

The above readings summarize academic stress and academic burnout with the mediation of academic self-efficacy. As mentioned above, the COVID-19 pandemic put the globe under much pressure not just in terms of health concerns but also to the mental health of online students. Several studies have already pointed out the effects of academic stress on academic burnout. In order to develop a sense of calmness in the face of challenging online assignments, activities, and exams, students' high self-efficacy relieves them in dealing with their educational issues. Therefore, the problem of university students' learning burnout has become a social phenomenon that cannot be ignored (Madigan, D.J., Curran, T., 2020).

Theoretical Framework

The study is anchored on the theory of Yoon, Y. & Jung I. (2014), which stated a positive relationship between academic stress and academic burnout. Academic self-efficacy affects academic stress and academic burnout of students. Academic self-efficacy intermediated the relationship between academic stress and academic burnout. Thus, improving academic self-efficacy is crucial for preventing and reducing symptoms of academic stress and academic burnout. In this regard, continuous social support and efforts are needed to develop instructional strategies and educational programs to improve students' academic self-efficacy.

It is supported by the theory of Cherniss (1992), Hallsten, 1993; Hobfoll & Freedy, 1993, which mentioned a relationship between academic burnout and physical and physiological states. They demonstrated that people who did not have a sense of self-efficacy lost their capacity to adapt. The social-cognitive theory was applied to determine the concept of self-efficacy. When examining the relationship between academic burnout and self-efficacy, it was revealed that academic burnout was significantly and negatively related to academic self-efficacy (Bandura, 1977).

It was demonstrated that academic stress was positively and negatively correlated with academic self-efficacy beliefs (Yucha, Kowalski, and Cross, 2015), Akin (2016), and Shokri et al. (2007). Academic stress was composed of: (1) *academic achievement*, (2) *stress-related to tests*, (3) *attending the class*, (4) *stress-related to study*, and (5) *concerns over future career*. Another study proved that students with a sense of self-efficacy overcame obstacles related to perceived stressful factors during their research (Luzzo & McWhirter, 2015).

Additionally, self-efficacy negatively impacted the stress perceived by university students (Akin, 2016). There are three factors associated with Academic Self-Efficacy: (1) *preference for task difficulty*, (2) *self-regulated efficacy*, and (3) *self-confidence in individual ability*. When the academic burnout among the students increases, academic self-efficacy will

decrease. While an increase in academic stress will decrease their self-efficacy. Considering the consequences of academic burnout on students, mainly regarding mental and physical health and academic achievements, detecting the associated factors is essential to implementing prevention programs and better managing educational plans (Reinke, W. M., & Hall, C., 2003).

On the other hand, academic burnout is understood to have many adverse consequences for students; however, several equivocal findings in the literature mean that it is currently unclear to what extent burnout affects academic achievement. It also leads to worse academic achievement in school, college, and university (Madigan, D.J., Curran, 2020). In addition, it can cause psychological disorders, including anxiety, depression, frustration, hostility, and fear in students (AzizzadehForouzi M., Shahmohammadipour P., Heidarzadeh A., Dehghan L., Taheri Z., 2016). Further, it is measured in terms of (1) *emotional exhaustion* (e.g., I feel exhausted by my studies), (2) *incompetence* (e.g., I seem to have no competence in my studies), (3) *antipathy to study* (I would like to live in a world without studying), (4) *cynicism* (e.g., I doubt the significance of my studies), and (5) *anxiety* (e.g., I have so many worries because of my studies) Lee and colleagues (2009).

Conceptual Framework

In figure 1, the conceptual framework manifested the variable of the study consisting of the following: The first variable (independent) includes the *openness to experience* pertains to the individual's intellectual curiosity for new concepts, ideas and beliefs, as well as their willingness to try out the new and unprecedented (Zhao and Seibert, 2006; Ariani, 2013); *conscientiousness* refers to the individual's tendency to be hard-working, well planned and organized, and dependable in fulfilling their responsibilities and duties (Costa and McCrae, 1992; Zhao and Seibert, 2006; Ariani, 2013); *extraversion* demonstrates assertiveness and dominance in social relations (Shane, 2003); *agreeableness* pertains to the cooperativeness, patience and friendliness to individuals whom needs to exert high energy levels and motivation that can destroy their relationships (Antoncic et al., 2015); and *neuroticism* refers to the emotions like depression, low self-esteem, hostility, anger or fear (Costa & McCrae, 1986).

Next, the academic self-efficacy or the mediating variable is measured in terms of *preference of task difficulty*, which refers to the difficulty of a task has a significant impact on an educational program's effectiveness, both in terms of encouraging mastery of the material and developing students' academic skills (Lannie & Martens, 2004); *self-regulated efficacy* or attribution of one of personal competence and control in a given situation" (Krueger & Brazeal, 1994), and *self-confidence on individual ability* which is the confidence of an individual in with their skills and capabilities (Kim & Park, 2001).

Lastly, the academic burnout consists of *emotional exhaustion* or the lack of sleep, energy, decreased motivation and power or control over what happens to the individual's life, *incompetence* pertains to the inability of the students to accomplish a specific task, *antipathy* refers to the unwillingness

of the students to their academics, *cynicism* or the student's selfish act, *and anxiety* or the worries of the individual (Lee and colleagues, 2009).

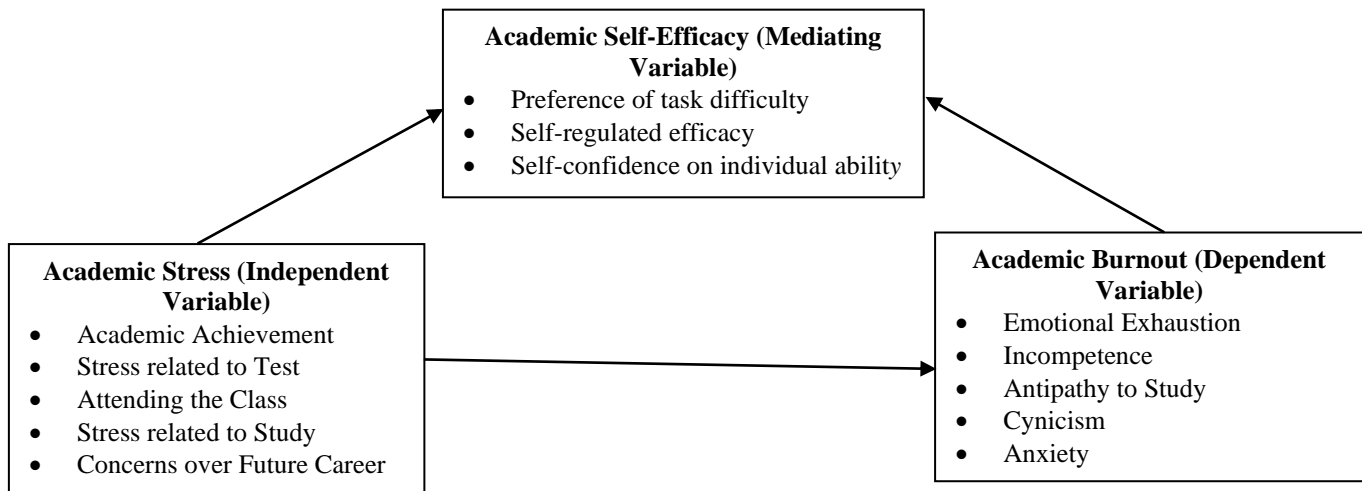


Fig. 1. The Conceptual Framework of the Study consumptions.

Significance of the Study

The findings of this study intensify the understanding of academic stress and burnout among college students in the Davao region. It intends to provide comprehensive knowledge of the student's experiences during the time of the pandemic as they engaged in an online class. This research generally provides an idea to the universities in Davao Region to maintain the quality of education for the students.

Further, this study will give the Universities in Davao Region an idea of how to maintain or improve the institution's strategic plan in delivering instructions. *Professors and teachers* in the university can also benefit from this study as to how they can improve their teaching approach. Also, this study will be beneficial to *college students* for them to adapt and adjust to online learning. They will also have an idea of how to maintain high academic grades and cope with academic stress and academic burnout in an online learning platform. Lastly, this can be of great help to *future researchers* in proving the context of the study.

Definition of Terms

To better understand the terminologies used in the study, the following terms are defined operationally.

Academic Stress. This study refers to the academic achievement, stress related to test, attending the class, stress related to study, and concerns over future career among college students in Davao Region.

Academic Burnout. Conceptually, it is defined as the student's emotional exhaustion, incompetence, antipathy to study, cynicism, and anxiety.

Academic Self-efficacy. Conceptually, it is defined as the student's preference of task difficulty, self-regulated efficacy and self-confidence.

II. METHOD

This chapter presents the discussion on the research design, research locale, population and sample, research instrument, data collection and statistical tools.

Research Design

The study employed a non-experimental design utilizing the descriptive-correlation technique to gather data, ideas, facts, and information related to the study. The study also used a mediation approach in ascertaining the mediating effect of the mediator variable. Non-experimental is usually descriptive or correlational, implying that it either explains a state of affairs or a phenomenon or defines a relationship between two or more variables with little intervention by the researcher. It ensures that the study will not alter certain factors or arbitrarily appoint the participants. Descriptive correlation is the relationship between variables without looking to establish a causal connection (Quaranta, 2017). The interest of the study was to investigate the relationships among academic stress, academic self-efficacy, and academic burnout of students having online classes during the COVID 19 pandemic, but also help to develop stress-prevention or reduction strategies and intervention programs for academic stress and self-efficacy in college students

Research Locale

The study was conducted in Region XI located on the southeastern portion of Mindanao, it comprises 5 provinces: Compostela Valley, Davao del Norte, Davao Oriental, Davao del Sur and the country's newest province, Davao Occidental, dividing the province of Davao del Sur in two. The region has six cities: Davao, Digos, Mati, Panabo, Samal, and Tagum, and 40 municipalities, grouped into 12 congressional districts and divided into 1 200 barangays. The region behaves as a melting pot for several cultural groups. Cebuanos, Boholanos and

Ilonggos are the main groups. Others include Maguindanaos, Maranaos, Manobos, T'bolis, Bagobos, B'laan, Samals, and Agtas. The smaller groups of Ilocanos, Tagalogs, Warays, and Bicolanos have also settled here. As far as population is concerned, the region is the 5th fastest growing area with 4.7 million inhabitants, making 18 percent of Mindanao's population and 4 percent of the country's total. The area has rich land and a healthy environment conducive to producing crops. In 2012, the area was the country's number 1 producer of coconut, durian, pineapple, cocoa, and coffee. It was ranked 2nd in abaca growth, just next to the Albay region. For the moment, the significant items are bananas, pineapple, palay, sugar cane, corn durian, and mango

Population and Sample

This study's respondents were college students in Region XI who were explicitly enrolled in online classes during the COVID-19 pandemic and were randomly chosen. The researcher used a Google form to collect data from the sample, which is also the most convenient method to use during this time. Three hundred seven (307) students completed the survey, 75 of whom were first-year students, 105 were second-year students, 106 were third-year students, and 21 were fourth-year students. It was administered from the third week of November 2020 to the second week of December 2020. The researchers then checked all responses to ensure their validity.

Number of Respondents per School:

Name of School	Sample	Percentage
Christian College of Southeast Asia-Davao	5	1.63%
Cor Jesu College Digos	11	3.58%
Davao Central College	40	13.03%
Davao Central College of Toril, Davao	3	0.98%
Davao Del Norte State College	4	1.30%
Holy Cross of Davao	34	11.07%
Institute of International Culinary and Hospitality Entrepreneurship	1	0.33%
Lyceum of the Philippines Davao	1	0.33%
Pepito Mauawan College Davao	1	0.33%
Philippines Womens College of Davao	6	1.95%
Saint Mary's College of Banganga Inc.	25	8.14%
St. Thomas More School of Law and Business	68	22.15%
UM Bansalan	3	0.98%
UM Panabo College	24	7.82%
UM Tagum College	53	17.26%
University of Immaculate Conception	9	2.93%
University of Mindanao	3	4.23%
University of Southeastern Philippines	3	0.98%
University of Immaculate Conception	3	0.98%
Total Number of Respondents	307	100%

The research instrument used by the researcher in data collection has three parts. The first part dealt with academic stress and was assessed with a 38- item scale used in the study of Oh and Chan (1994). Each item has a five-point Likert scale; higher scores reflect higher academic stress. Cronbach's alpha coefficients for academic stress were .917. In addition, the 38-item scale consists of five subscales: (1) academic achievement, (2) stress-related to tests, (3) attending the class, (4) stress-related to study, and (5) concerns over future career. This questionnaire was pilot tested on 41 participants who were not

part of the study. It has a Cronbach's alpha of 0.808 which means that the internal consistency is good.

In interpreting the data on adversity response, the following scales were utilized:

Range of Means	Descriptive Level	Interpretation
4.20-5.00	very high	This means the measures on academic stress are always observed.
3.40-4.19	high	This means the measures on academic stress are oftentimes observed.
2.60-3.39	moderate	This means the measures on academic stress are sometimes observed.
1.80-2.59	low	This means the measures on adversity response are rarely observed.
1.00-1.79	very low	This means the measures on academic stress are never observed.

The second part is academic self-efficacy, measured by a 28-item scale that Kim and Park (2001) developed and verified. Each item has a five-point Likert scale, and the reliability of the 28-item scale for academic self-efficacy was .884. Three subscales were identified using the 28-item scale: (1) preference of task difficulty, (2) self-regulated efficacy, and (3) self-confidence in individual ability. This questionnaire was pilot tested on 41 participants who were not part of the study. It has a Cronbach's alpha of 0.846 which means that the internal consistency is acceptable.

Range of Means	Descriptive Level	Interpretation
4.20-5.00	very high	This means the measures on academic self-efficacy are always observed.
3.40-4.19	high	This means the measures on academic self-efficacy are oftentimes observed.
2.60-3.39	moderate	This means the measures on academic self-efficacy are sometimes observed.
1.80-2.59	low	This means the measures on academic self-efficacy are rarely observed.
1.00-1.79	very low	This means the measures on academic self-efficacy are never observed.

The third part is academic burnout which used the Korean Academic Burnout Inventory (KABI) modified by Lee and colleagues (2009) for Korean adolescent students. The Korean Academic Burnout Inventory originated from the Maslach Burnout Scale-Student Survey, a modified version of the Maslach Burnout Inventory-General Survey for university student samples (Schaufeli et al., 2002).

Range of Means	Descriptive Level	Interpretation
4.20-5.00	very high	This means the measures on academic burnout are always observed.
3.40-4.19	high	This means the measures on academic burnout are oftentimes observed.
2.60-3.39	moderate	This means the measures on academic burnout are sometimes observed.
1.80-2.59	low	This means the measures on academic burnout are rarely observed.
1.00-1.79	very low	This means the measures on academic burnout are never observed.

The KABI consists of 25 items that constitute five subscales: (1) emotional exhaustion (e.g., I feel exhausted by my studies), (2) incompetence (e.g., I seem to have no competence in my studies), (3) antipathy to study (I would like to live in a world

without studying), (4) cynicism (e.g., I doubt the significance of my studies), and (5) anxiety (e.g., I have so many worries because of my studies). This questionnaire was pilot tested on 41 participants who were not part of the study. It has a Cronbach's alpha of 0.880 which means that the internal consistency is good.

Data Collection

The following were the steps used in gathering the data of the study:

First, the researcher asked permission to conduct the study. The researcher asked permission from the different schools to conduct the study and then prepared the questionnaires for checking by the adviser. The research adviser checked the items included in the questionnaire. Afterwards, the questionnaires were piloted and tested on 41 participants not part of the study to get the internal validity of the questionnaires. Next was the distribution and retrieval of the questionnaire. The questionnaires have been distributed to the students using google forms to answer with an honest-to-goodness assessment. Lastly was the collation, tabulation, and interpretation of Data after generating the response of the students in the google form.

Statistical Tools

Guided by the research objectives, the following statistical tools were used to analyze the data.

Mean. This was used to describe of level of academic stress, academic burnout and academic efficacy of students conducting online classes during COVID-19

Pearson r. This was used to describe the level of academic stress, academic burnout, and academic efficacy of students conducting online classes during COVID-19

Regression. This was used to determine the coefficient as input to medgraph.

Medgraph using Sobel z-test. This was used to ascertain the significance of the mediation of academic stress, and academic burnout of students conducting online classes during COVID-19.

III. RESULTS

Established in this chapter are the data and the analysis of findings based on the respondents' responses on academic self-efficacy, academic stress, and academic burnout of online class students during the Covid-19 pandemic in Davao City. Tables are arranged in the following subheadings: assessment of the level of academic self-efficacy, level of academic stress, level of academic burnout of online class students, the significance of the relationship between academic self-efficacy, academic stress, and academic burnout, and test of mediating effect of academic self-efficacy in response on the relationship of academic stress and academic burnout.

Level of Academic Stress as Perceived by Online Class Students during the Covid- 19 Pandemic

Shown in Table 1 are the results of the descriptive statistics on assessing the level of academic stress as perceived by online class students during the Covid-19 Pandemic, which has an overall mean of 3.379 (SD=0.830), described as *high*. The moderate level indicates high to very high levels surmised of its

indicators, including *concerns over future career*. (!=3.638, SD=0.867), *academic achievement* (!=3.513, SD=0.784) and *stress related to test* (!=3.434, SD=0.869), which are assessed to be high. Hence, the following moderate levels of the following indicators: *stress related to studying* (!=3.146, SD=0.824) and *attending the class* (!=3.146, SD=0.824).

TABLE 1. Level of Academic Stress as Perceived by Online Class Students during the Covid-19 Pandemic

Indicators	Mean	SD	Descriptive Level
Academic Achievement	3.513	0.784	High
Stress related to test	3.434	0.869	High
Attending the class	3.146	0.824	Moderate
Stress related to study	3.164	0.804	Moderate
Concerns over future career	3.638	0.867	High
Overall	3.379	0.830	High

Level of Academic Burnout as Perceived by Online Class Students during the Covid- 19 Pandemic

Shown in Table 2 are the results of the descriptive statistics on assessing the level of academic burnout as perceived by online class students during the Covid-19 Pandemic, which has an overall mean of 2.497 (SD=0.896), described as *moderate*. The moderate level is indicative surmised of its indicators, to include *anxiety* (! =3.434, SD=0.842), *incompetence* (!=2.983, SD=0.897), *cynism* (!=2.951, SD=0.874), *emotional exhaustion* (!=2.905, SD=0.935), *antipathy to study* (!=2.572, SD=0.931)

TABLE 2. Level of Academic Burnout as Perceived by Online Class Students during Covid- 19 Pandemic

Indicators	Mean	SD	Descriptive Level
Emotional exhaustion	2.905	0.935	Moderate
Incompetence	2.983	0.897	Moderate
Antipathy to study	2.572	0.931	Moderate
Cynicism	2.951	0.874	Moderate
Anxiety	3.325	0.842	Moderate
Overall	2.497	0.896	Moderate

Level of Academic Self Efficacy as Perceived by Online Class Students During the Covid- 19 Pandemic

Shown in Table 3 is the descriptive statistics results on assessing the level of academic self-efficacy as perceived by online class students during Covid-19 Pandemic, which has an overall mean of 3.377 (SD=0.750), described as *moderate*. The moderate level is indicative surmised of its indicators, to include *self-confidence* (!=3.462, SD=0.879), *self-regulated efficacy* (!=3.369, SD=0.666) and *preference of task difficulty* (!=3.299, SD=0.706).

TABLE 3. Level of Academic Self Efficacy as Perceived by Online Class Students during Covid- 19 Pandemic

Indicators	Mean	SD	Descriptive Level
Preference of Task Difficulty	3.299	0.706	Moderate
Self-regulated efficacy	3.369	0.666	Moderate
Self-confidence	3.462	0.879	Moderate
Overall	3.377	0.750	Moderate

Correlation between Academic Self Efficacy, Academic Stress and Academic Burnout of Online Class Students During Covid-19 Pandemic

Displayed in Table 4 are the results of the relationship between the independent (academic stress), dependent (academic burnout), and mediator (self-efficacy) variables.

Bivariate correlation analysis using Pearson product-moment correlation was employed to determine the relationship between the variables mentioned.

The first zero-ordered correlation analysis between academic stress and academic burnout revealed a computed *r*-value of 0.621 with a probability value of $p < 0.000$, which is significant at the 0.05 level. This indicates a positive and strong association between the two variables (Evans, 2002). Thus, the null hypothesis of no significant relationship is therefore rejected.

In the same manner, the second bivariate correlation analysis involving academic stress and academic self-efficacy yielded an *r*-value of 0.736 with a probability value of $p < 0.000$, which is significant at the 0.05 level. This indicates a positive and strong association between the two variables (Evans, 2002). Thus, the null hypothesis of no significant relationship is also rejected.

TABLE 4. Correlation analysis of the variables

Pair	Variables	Correlation	p-value	Decision
		Coefficient		
IV and DV	Academic Stress and Academic Burnout	0.621	0.000	Reject
IV and MV	Academic Stress and Academic Self-Efficacy	0.736	0.000	Reject
MV and DV	Academic Self-Efficacy and Academic Burnout	0.535	0.000	Reject

The third correlational analysis between academic self-efficacy and academic burnout yielded an *r*-value of 0.535 with a probability value of $p = 0.000$, which is significant at a 0.05 level. This indicates a very positive and strong association between the two variables (Evans, 2002). Thus, the null hypothesis of no significant relationship is also rejected.

Mediation Analysis of the Three Variables

Data were analyzed with the linear regression method as input to the medgraph. Mediation analysis developed by Baron and Kenny (2001) is the mediating effect of a third variable in the relationship between two variables.

Four steps must be met for a third variable to act as a mediator. In Table 5, these are categorized as steps 1 to 4. In step 1, academic stress as the independent variable (IV) predicts academic burnout of online class students, which is this study's dependent variable (DV). In step 2, academic stress significantly predicts academic self-efficacy response, the mediator (M). In step 3, academic self-efficacy significantly predicts academic burnout of online class students.

Since the three steps (paths a, b, and c) are significant, further mediation analysis through medgraph is warranted, involving the Sobel z test to assess the significance of the mediation effect. If the effect of the independent variable on the dependent variable becomes non-significant at the final step of the analysis, full mediation will be achieved. It means the mediator variable mediates all the effects. In addition, if the regression

TABLE 5. Regression results of the variables in the four criteria of the presence of mediating effect

Step	Path	Beta	Standard	Beta
		(Unstandardized)	Error	(Standardized)
Step 1	C	0.680	0.049	0.621
Step 2	A	0.630	0.033	0.736
Step 3	B	0.683	0.062	0.535
Step 4	c'	0.583	0.042	0.127

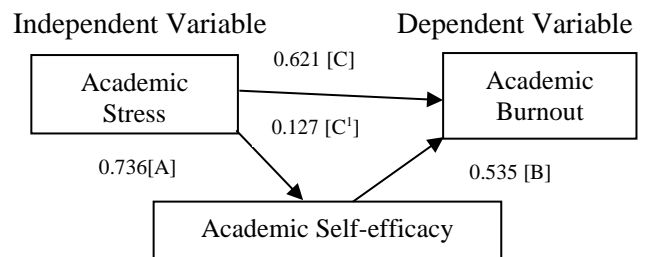
Coefficient is substantially reduced at the final step but remains significant, only partial mediation is obtained, which implies that part of the independent variable (academic stress) is mediated by the mediator (academic self-efficacy) but other part are either direct or mediated by other variables that are not included in the model. In this case, as gleaned in step 4 (denoted as c'), the effect of academic stress on academic burnout was even found to increase after mediated by academic self-efficacy. With this, partial mediation took place since the effect was found to be significant at $p < 0.05$ level.

Furthermore, the result of the computation of mediating effects is shown in Figure 2. The Sobel test yielded a z-value of 2.560 with a *p*-value of 0.010, which is significant at 0.05. This means that the mediating effect is partial, such that the original direct effect of academic stress on academic burnout improved upon adding academic self-efficacy.

The figure also shows the results of the computation of the effect size in the mediation test conducted between the three variables. The effect size measures how much of the effect of academic stress on academic burnout can be attributed to the indirect path. The total effect value of 0.680 is the beta of organizational climate towards service quality. The direct effect value of 0.583 is the beta of academic stress towards academic burnout with academic self-efficacy included in the regression. The indirect effect value of 0.630 is the amount of the original beta between the academic stress and academic burnout that now goes through academic self-efficacy to academic burnout (a * b, where "a" refers to the path between OC → SQ and "b" refers to the path between AR → SQ).

The ratio index is computed by dividing the indirect effect by the total effect; in this case, 0.630 by 0.680 equals 0.926. It seems that about 92.6 percent of the total effect of academic stress on academic burnout goes through the academic self-efficacy, and about 7.35 percent of the total effect is either direct or mediated by other variables not included in the mode

Standardized Coefficients



Sobel z-value 2.56000179, $p < 0.05$

Effect Size Measures

Unstandardized Coefficients

Total:	0.621
Direct:	0.583
Indirect:	0.630
Ratio Index:	0.926

Fig. 2. Medgraph Showing the Variables of the Study

IV. DISCUSSION

Presented in this chapter are the discussions of the data on the mediating effect of self-efficacy in response on the relationship between academic stress and academic burnout of online class students during COVID-19 Pandemic.

Level of Academic Stress as Perceived by Online Class Students during the Covid- 19 Pandemic

The level of academic stress perceived by online class students during the Covid 19 pandemic is high, obtained based on the respondents' responses in the areas of concerns over future career, academic achievement, stress related to studying, attending the class, and stress-related to test.

The student's level of academic stress is high, which implies that the respondents have felt stress in an online class in terms such as they need to research more on the internet to understand thoroughly on the topic. It is also shown that students feel the burden of having too much homework and cannot sleep enough because they worry when they cannot submit an assignment/test in the e-classroom. This result is similar to the study of Masih and Gulrez (2006) that mentioned the curriculum and syllabus, which often require additional requirements with many workloads, resulting in unbalanced school timings. The result is also supported by the findings of Jain and Singhai (2018), in which an examination is the most significant source of stress among students. In the online class, there are examinations, assignments, and many other activities that a student has to shuffle through.

In addition, student stress can also be linked to academic demands. The students feel stressed with some teachers who are inconsiderate with our situations and uncertain about finishing the course in the online class because they too have many things to prioritize. This is in parallel with the study of Pascoe, Hetrick, and Parker (2019), which mentioned that students in college face a wide range of ongoing normative stressors, which can be defined as typical day-to-day hassles such as constant academic demands.

However, students are also positive enough that their grades are significant for their future and school performance determines their whole life. This is a good indication that despite the students struggling with their academic continuity using digital technology, they see this as an opportunity to embrace the new ways of education. The result confirms the study of Wladis et al. (2015), which mentioned that with technological advancement, students could learn in their comfort zone anywhere at any time. The study also parallels the findings of Steinmayr et al. (2014) that academic achievement is vital as it powerfully shapes a person's life.

Level of Academic Burnout as Perceived by Online Class Students during the Covid- 19 Pandemic

The level of academic burnout perceived by online class students during the Covid-19 Pandemic is moderate, based on the respondents' responses to anxiety, incompetence, cynicism, emotional exhaustion, and antipathy to study.

The student's academic stress level is moderate, implying that the respondents have somehow felt academic burnout in online classes. After all, they do not want to study anymore because they feel burned out in online classes. They are exhausted after our virtual session. Yang (2014) supported this result that academic burnout leads to difficulties in the learning process. Students who suffer academic burnout frequently display a state of sensitive fatigue, a tendency to depersonalization, and a feeling of low personal achievement.

Another indicator of academic burnout from online classes is internet interruption. Students feel unease when taking the exams or attending online classes, thinking that the internet connection might get interrupted. This result has been indicated in the study by Kristanto, Chen & Thoo (2016). It impacts the individual's ability to remain motivated, engaged, and productive. Those experiencing burnout have higher rates of absenteeism and turnover.

However, students attending online classes have been shown to fight the challenges as they are concerned with their performance in school. Students have shown to be overwhelmed because their grades are not good even though they study very hard. This result was supported in Madigan, D.J., and Curran (2020) study, which stated that burnout leads to worse academic achievement in school, college, and university. Given that academic burnout is highly prevalent among university students, it is essential to reduce academic burnout.

Correlation between Academic Self Efficacy, Academic Stress and Academic Burnout of Online Class Students During Covid-19 Pandemic

The test of relationship using the bivariate correlation analysis using Pearson product-moment correlation between independent (academic stress), dependent (academic burnout), and mediator (academic self-efficacy) variables reveals a varied relationship among the variables mentioned. Academic stress was positive and strongly associated with academic burnout. Thus, the null hypothesis of no significant relationship is therefore rejected. With the same relationship, academic stress and academic self-efficacy consequently reject the null hypothesis of no significant relationship between the variables. Moreover finally, the third pair, mediator (academic self-efficacy) and dependent (academic burnout) variables, rejects the null hypothesis of no significant relationship between the variables mentioned.

First, academic stress was found to have a high positive correlation with academic burnout, and its positive influence was statistically significant in the path model. In other words, the more the students felt academic stress, the higher their level of academic burnout was. This result was confirmed in the study by Yoon, Y., & Jung, I. (2014). There is a positive relationship between academic stress and academic burnout. Academic self-efficacy intermediated the relationship between academic stress and academic burnout.

Thus, improving academic self-efficacy is crucial for preventing and reducing symptoms of academic stress and academic burnout. In this regard, continuous social support and efforts are needed to develop instructional strategies and educational programs to improve students' academic self-efficacy.

Second, the process model of this study about academic self-efficacy as a mediator was examined. It was found that academic stress influenced academic burnout both directly and indirectly. The students' academic stress had a relatively high inverse correlation with academic self-efficacy; the higher their academic stress was, the lower their academic self-efficacy was. This result was similar to previous research exploring the relationship between academic stress and academic self-efficacy among students of all age groups (Chiu, 2014; Min, 2011; Oh & Seon, 2013; Park, 2011). The students' academic self-efficacy also correlated with their academic burnout; this was a statistically and significantly negative influence. In other words, as their academic self-efficacy increased, it was possible to lower their academic burnout.

Mediation Analysis of the Three Variables

A series of regression procedures were conducted for mediation analysis to be carried out. Based on the results, academic stress significantly predicts academic burnout of online class students during COVID 9.

This conforms to the study of (Hossein J., Naser N., & Hamideh S., 2017) on the relationship between academic burnout and stress with academic self-efficacy as a moderating variable, which revealed that academic burnout was significantly related to academic self-efficacy among the students. When the academic burnout among the students increases, academic self-efficacy decreases. On the other hand, an increase in academic stress among the students decreases their self-efficacy. Considering the consequences of academic burnout on students, mainly regarding mental and physical health and academic achievements, detecting the associated factors is essential to implementing prevention programs and better managing educational plans (Reinke, W. M., & Hall, C., 2003). Therefore, the problem of university students' learning burnout has become a social phenomenon that cannot be ignored (Madigan, D.J., Curran, T., 2020).

V. CONCLUSION

With consideration of the findings of the study, conclusions the following:

The respondent of online class students in the Davao Region perceived a high level of academic stress, a moderate level of academic burnout, and a moderate level of self-efficacy. The results also confirm a significant relationship between academic stress and academic burnout among the online class students in the Davao Region. Similarly, there is a significant relationship between academic stress and academic self-efficacy and a significant relationship between academic self-efficacy and academic burnout. Moreover, the result of the study also suggests that academic self-efficacy significantly mediates the relationship between academic stress and academic burnout of online class students in the Davao Region.

Recommendations

The study found a significant relationship between academic stress and academic burnout in implementing online classes in Davao Region. Therefore, the researchers recommend supporting the stress process—specifically academic self-efficacy—which plays a mediating role in the relationship between academic stress and academic burnout in students. Teachers should not demand excessive academic workloads from students but try to motivate them academically because well-motivated students perform well academically.

The study also reveals a significant relationship between academic stress and academic burnout mediating academic self-efficacy. The researchers suggest seeking effective academic strategies or programs to increase academic self-efficacy among online class students. It is necessary to discuss this issue in the field of education and the curriculum.

It is also recommended to propose a good design of curriculum and syllabus that has an excellent time-bound to both students and teachers to address academic stress and burnout of students having the online class.

Some limitations need to be discussed concerning generalizing from this study's results. The study was conducted with students in a particular year wherein the Covid -19 pandemic shifted the traditional face-to-face classes to online classes. As a result, applying the results to the general student population is not easy.

Therefore, to obtain more profound and substantial information, conducting a similar study with a broader scope and a more significant population will be necessary to provide a good result, not just for a particular region. This study can also be backed up with a qualitative approach to the lived experience of the students during the Covid-19 pandemic outbreak lockdown on schools.

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