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## The Relationship of Academic Burnout and Internet Addiction in Academic Achievement: The Mediating Role of Optimism in Students

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**Abstract:** For students, academic achievement is significant. In addition to providing motivation, academic achievement also makes it easier for students to continue to the next level of education. However, academic burnout and internet addiction sometimes prevent them from achieving academic achievement. Therefore, this study examined the relationship between academic burnout and internet addiction. This study also includes optimism as an intervention variable. The research method used in this study is quantitative with explanatory type. The population in this study were ninth-grade students at SMP Negeri 11 Malang, with a sample of 72 students using the Slovin formula. Data were collected using a questionnaire, which was then distributed to respondents. One hundred fifteen respondents were obtained, and the results were then analyzed using partial least squares with the help of the SMART-PLS application. Direct and indirect results, such as overall academic burnout, hurt academic achievement and optimism. However, positive results were shown for internet addiction on academic achievement and optimism. This finding implies that excessive tasks and responsibilities lead to burnout and decreased academic performance. However, internet addiction in students can have a positive impact if used as a relevant learning resource.

**Keywords:** academic achievement, academic burnout, internet addiction

## INTRODUCTION

Academic achievement is academic achievement in formal education that is assessed using assessments. Achieving academic achievement at school is a source of student pride ([Assakinah et al., 2022](#); [Munthe & Pasaribu 2023](#)) revealed that academic achievement is a value, award, or other thing related to students' success. The academic

success students achieve is evidenced by grade reports, transcripts, KKM scores and others. Good academic achievement in students shows good achievement for students (Fahira, 2022; Munthe & Pasaribu, 2023). Good academic achievement is essential for students to continue to the next level, which can be done by studying hard. However, some things become obstacles for students in achieving this learning achievement. Some of the challenges experienced by students include low economic background, an unsupportive environment, mental and physical problems, and addiction to the Internet (Acebes et al., 2022; Basri et al., 2022). In addition, high academic demands, boredom, and negative emotional states can also contribute to declining learner motivation and academic achievement (Cristian et al., 2022; Silva et al., 2020). This is called academic burnout, which can decrease student motivation.

The issue of academic burnout is of particular concern in the field of education. This is because academic fatigue is an obstacle to achieving academic performance. Qin et al. (2022) mentioned that academic burnout is a negative factor in achieving academic achievement at the secondary education level. There are 2 factors in academic burnout, including biological conditions, for example, puberty and pressure from family demands (Madigan & Curran, 2021) also revealed that the lack of interest and effort in learning will affect students' academic achievement. A lack of motivation to learn indicates academic burnout in learners, frequent absences, and lack of class participation (Akabay & Akbay, 2016). This results in poor academic achievement in learners. In addition to impacting declining academic achievement, academic burnout also impacts student dropout (Wardani et al., 2021).

While the Internet is an essential aspect of teenagers' lives, it is important to note that it can also have negative impacts, such as addiction. Citing a survey conducted by CNN (2021), data shows that more than 19% of teenagers in Indonesia are addicted to the Internet. Some teenagers use it to play online games. Findings Yusuf et al. (2022) stated that internet addiction is a problem in adolescents who use smartphones excessively. Easy access to information and communication can be done quickly into an opportunity to exchange information through smartphones Legowo et al. (2021). It is caused by high curiosity about a new thing, giving an addiction to the Internet. Then, Haramain & Afiah (2022) argue that internet addiction causes students to lack motivation to learn, which in turn impacts students' academic performance. A study by Diotaiuti et al. (2022) mentioned that internet addiction hurts students' academic performance. More in-depth, Uddin et al. (2016) explain that internet addiction will cause mental health problems and psychological disorders. Thus, several studies have suggested that internet addiction will hurt adolescents' mental health (Toozaandehjani et al., 2021; Uddin et al., 2016). Then, Toozaandehjani et al. (2021) mentioned that adolescents who use the Internet excessively have poorer health quality than others who are not addicted. Wutsqo et al. (2023) mentioned that internet addiction is included in juvenile delinquency, just like cigarette addiction.

Several studies have shown that an optimistic attitude towards learning increases engagement and motivation in the classroom, which has important implications for student achievement and success. Optimism has been shown to positively impact academic performance and reduce the risk of burnout among students. Optimism has been shown to positively impact academic performance and reduce the risk of burnout among students. Saras (2023) stated that students with high levels of optimism are better equipped to manage stress, maintain consistent study habits, and manage their time effectively. The level of optimism can be influenced by various factors, including genetics, family and environmental experiences, attitudes and resilience, social support,

personality, and self-awareness. According to [Wardani et al. \(2021\)](#), adopting an optimistic approach to achieving learning goals can generate positive emotions, increase motivation, reduce stress, and improve academic performance in school children.

Several studies on academic burnout and internet addiction have been conducted and found that it hurts students' academic performance ([Azizi et al., 2019](#); [Madigan & Curran 2021](#)) mentioned that academic fatigue will worsen the state of students' academic performance. Findings from [Welong et al. \(2020\)](#) also mentioned that academic burnout hurts academic performance. Internet addiction also has a negative influence on academic performance. The findings revealed by [Muliani & Widjaja \(2022\)](#) said that students use the Internet not as a source of learning but as a source of entertainment. [Muhammad \(2020\)](#) found that adolescents' internet addiction decreased academic achievement. However, [Legowo et al. \(2021\)](#) mentioned that the positive impact of the Internet provides convenience in communication if used appropriately.

Furthermore, the findings of [Dou & Shek \(2021\)](#) show that optimism in academics positively impacts academic achievement. The research results by [Anshari et al. \(2022\)](#) state that optimism in students provides a positive value to their minds, ultimately affecting their academic performance. Then, related to the findings regarding academic burnout presented by [Kirana et al. \(2023\)](#), it was stated that academic burnout has a negative relationship with academic achievement. [Simanjuntak & Kusumiati \(2023\)](#) also found that academic burnout does not increase academic achievement. Referring to the description of previous research, no research has specifically explored the relationship between the two variables and identified the extent of their influence on each other.

Previous researchers only included the variables of academic burnout, internet addiction, and academic achievement separately. Therefore, this study wants to include the variables of academic burnout, internet addiction, and academic achievement together and add optimism as an intervention variable. The focus of this study is only to examine the direct and indirect relationships between the variables of academic burnout (X1), internet addiction (X2), and optimism (Z) on academic achievement (Y). Thus, this study is expected to contribute new knowledge on academic burnout, internet addiction, optimism, and academic achievement.

## RESEARCH METHODS

This research uses a quantitative approach with an explanatory design. An explanatory design is used to test the hypothesis relationship that has been developed. Meanwhile, the research time was from February 12 to April 13, 2024. The location of this research is SMP N 11 Malang City, which has a population of 9th-grade students totaling 258. The reason for choosing grade 9 as the population refers to the increasingly complex tasks they have, and it is also approaching the time of the graduation exam. Then, after obtaining the population, the sample was determined using the Slovin formula with a 10% margin of error. A 10% margin of error was chosen based on the number of populations that did not reach 1000 ([Sumargo, 2020](#)) Then, the sampling technique uses purposive random sampling.

Based on the results of the calculation of the Slovin formula, a value of ( $n = 72.07$ ) was obtained, and it was then rounded up to 71 students. Thus, at least 72 samples are needed in this study. The sampling technique used purposive random sampling, and all students had the opportunity to answer the questionnaire.

Variables in the study include academic burnout (AB) and internet addiction (IA),

adopted from [Gu et al. \(2023\)](#). The academic burnout variable consists of 3 indicators, with 8 statement items on the variable. Then, on the internet addiction (IA) variable, there are 5 indicators consisting of controversial internet use, compulsive use, withdrawal symptoms, interpersonal and health issues, and time management issues and then developed into 9 statement items. Furthermore, the optimism variable (OPT) which acts as an intervention variable and is adopted from [Kleiman et al. \(2017\)](#) with 4 indicators consisting of positive expectations for the future, upbeat inferential style, beliefs in personal control, and self-enhancing views relative to others and there are 9 statement items. Then, the academic achievement variable (ACh) was adopted from Al-Abyadh & with a total of 6 statement items. The questionnaire was developed using closed questions. Then, the questionnaire was distributed to students online in Google Forms and offline as a complex file. After obtaining the data, data processing was carried out using the partial least square technique with the help of the SMART-PLS statistical application.

## RESULTS

### *Characteristics responders*

The results of distributing questionnaires obtained 115 respondents who filled out the questionnaire. The characteristics of respondents include gender, class, students' sleep time, and the period of students playing on the internet in a day. The distribution of respondent characteristics can be seen in [Table 1](#).

**Table 1. Respondent Characteristics**

<i>Characteristics</i>	<i>Info</i>	<i>Total (N)</i>	<i>Total (%)</i>
Gender	Male	49	43%
	Female	66	57%
Grade	IX-A	36	31%
	IX-B	14	12%
	IX-C	26	23%
	IX-D	17	15%
	IX-G	22	19%
	1-2 hours per day	13	11%
Internet usage in a day	3-4 Hours per day	40	35%
	4-8 Hours per day	37	32%
	Not counted	25	22%
	7-9 hours per night.	32	28%
Sleep time during the night	8-10 hours per night.	45	39%
	9-11 hours per night.	19	17%
	Not counted	19	17%
<b>Total</b>		<b>115</b>	<b>100%</b>

Table 1 shows the characteristics of respondents obtained from distributing questionnaires. As a result, respondents of the male gender (49 respondents or 43%) and female (66 respondents or 57%) were the respondents. Then, in the class section, the answers from class IX-A were (36 respondents or 31%). Class IX-B were (14 respondents or 12%), class IX-C were (26 respondents or 23%), class IX-D were (17 respondents or 15%) and in-class IX-G (22 respondents or 19%). Then, students at SMP 11 had internet usage dominant in the answer, which was 3 to 4 hours per day (40 respondents or 35%). The rest of the students have internet usage in the range of 4-8 hours per day (37 respondents or 32%), 1-2 hours per day (13 respondents or 11%), and as many as 25 respondents or 22% answered, not counted. Finally, the sleeping time at night of SMP 11 students has a dominance of 8-10 hours per night with answers (45 respondents or 39%) then continued with 7-9 hours per night (32 respondents or 28% of respondents), and the remaining 38 respondents or 34% on the answer 9-11 hours per night and did not count their sleeping hours. Thus, 115 respondents have filled out this research questionnaire.

### **Outer Model**

The outer model test is a prerequisite in partial least squares structural equation modeling (PLS-SEM). This test is conducted to see each variable's validity and reliability values through the statement items developed. The required tests are outer loadings, average variance extracted (AVE), and composite reliability (CR). Factor loading in PLS-SEM is a testing stage to see the value of each indicator in representing variables.

In addition, the purpose of testing outer loading is to see the validity of the data obtained. The validation acceptance criteria for testing on outer loading, according to Wong (2018), is more than 0.6. However, if there is a value below 0.6, then the item should be removed from the report and retested. In the report in Table 2, several statement items were deleted because they needed to meet the assessment standards. Then, before conducting hypothesis testing, it is necessary to test reliability by looking at the amount of AVE and CR values on each variable. AVE measures the extent to which a construct explains variation in measurement, while CR measures how reliable a construct is. Wong (2018) states that decision-making in the AVE test must be greater than 0.5, while the CR value must be greater than 0.7. Table 2 is a complete report on testing outer loading, composite reliability, and average variance extracted.

The results of testing the outer model are presented in Table 2 with the lowest outer loading value for the AB variable at (0.695>0.6) and the highest at (0.799>0.6). Then at the CR value of (0.845>0.7) and AVE of (0.578>0.6). The ACh variable has an outer loading value of (0.605>0.6) with a CR value of (0.868>0.7) and an AVE value of (0.527>0.5). Furthermore, the IA variable with the lowest outer loading value is (0.628>0.6) at a CR value of (0.863>0.7) and an AVE value of (0.561>0.5). Finally, in the Opt variable with an outer loading value of (0.661>0.6), CR has a value of (0.896>0.7) and AVE with a value of (0.554>0.5). Thus, all items used in the variable have a normal distribution and are reliable. So, it can be continued in the next test.

### **Inner Model**

The inner model test is required to analyze the developed hypothesis. Bootstrapping using SMART-PLS is required to test the inner model. The tests carried out are direct effects and indirect effects. Direct testing is done by testing the variables AB, IA on ACh and AB, IA on OP and, which strengthen X1 and X2. Meanwhile, indirect testing is done by testing the relationship of AC, IA, ACh, and OP variables.

The criteria for hypothesis decision-making in these two tests is if the sig value has a result less than 0.05 then the hypothesis can be accepted. However, if the sig value is more than 0.05, then the hypothesis is rejected. Table 3 is a report of direct and indirect hypothesis testing.

**Table 2. Outer Model Testing Results**

<i>Item</i>	<i>Outer Loadings</i>	<i>Composite Reliability</i>	<i>Average Variance Extracted</i>
AB2	0.695		
AB3	0.775		
AB4	0.799	0.845	0.578
AB6	0.768		
ACh1	0.819		
ACh2	0.795		
ACh3	0.787		
ACh4	0.605	0.868	0.527
ACh5	0.704		
ACh6	0.615		
IA1	0.809		
IA2	0.834		
IA3	0.760	0.863	0.561
IA4	0.694		
IA8	0.628		
OPt1	0.831		
OPt2	0.764		
OPt3	0.689		
OPt5	0.763	0.896	0.554
OPt6	0.789		
OPt7	0.697		
OPt8	0.661		

**Table 3. Hypothesis Testing**

<i>Relationship</i>	<i>Original Sample</i>	<i>T Statistics</i>	<i>Sig</i>	<i>Decision</i>
<b>Direct Testing</b>				
AB (X1) → ACh (Y)	-0.126	1.559	0.120>0.05	REJECT
AB (X1) → OPt (Z)	-0.060	0.489	0.625>0.05	REJECT
IA (X2) → ACh (Y)	0.168	2.245	0.025>0.05	ACCEPT
IA (X2) → OPt (Z)	0.504	7.137	0.000>0.05	ACCEPT
OPt (Z) → ACh (Y)	0.658	10.210	0.000>0.05	ACCEPT
<b>Indirect Testing</b>				
AB (X1) → OPt (Z) → ACh (Y)	-0.039	0.491	0.624>0.05	REJECT
IA (X2) → OPt (Z) → ACh (Y)	0.332	5.352	0.000>0.05	ACCEPT

The presentation of hypothesis testing results can be seen in Table 3. The results of 5 direct relationship tests obtained as many as 2 hypotheses and 3 others were accepted. The AB to ACh relationship has a value of  $(0.120 > 0.05)$ , and the value of AB to OPt has a value of  $(0.625 > 0.05)$ . Thus, the direction of the negative and insignificant relationship between AB to ACh and AB to OPt variables is not fulfilled because the p-value is less than 0.05. Then, there is a positive and significant influence on the relationship of IA to ACh with a value of  $(0.025 > 0.05)$ , the relationship of IA to OPt with a value of  $(0.000 > 0.05)$ , and the relationship of OPt to ACh with a value of  $(0.000 > 0.05)$ . Thus, these variables have sig values exceeding 0.05, a positive and significant influence. In the indirect test, OPt failed to provide support in the variable AB to ACh with a value of  $(0.624 > 0.05)$ . Therefore, the test decision was rejected with a value less than 0.05. Meanwhile, OPt successfully supports the relationship of IA to ACh with a value of  $(0.000 > 0.05)$ . Thus, the test can be accepted, and the two have a positive and significant relationship.

## DISCUSSION

### *Academic burnout, optimism, and academic achievement*

SMP 11 students have many tasks at school, thus providing physical and mental fatigue and impacting academic burnout. A lack of confidence also influences the onset of academic burnout in students, so they do not get the benefits of learning activities. This aligns with the findings of (Kong 2023; Marôco et al. 2020) who mention that learning pressure and interest in knowledge reduce students' academic achievement. Meanwhile, Safira & Wicaksono (2023) stated that various factors, including academic burnout, can cause students to lack confidence. The lack of time management skills also influences academic burnout, so students are not maximized in working on assignments. Hou and mentioned that learners who have difficulty managing their time efficiently have an impact on experiencing fatigue in their academic activities. In addition, the lack of rest time for students also causes fatigue so that they do not have concentration during learning. The role of the surrounding environment that is less supportive, especially the role of peers and parental support, also causes academic burnout in students. Albu et al. 2018; Afifah et al. 2019) mentioned that lack of sleep and excessive activity can cause fatigue and affect concentration at school. Mehralizadeh et al. (2013) confirmed that insufficient rest time and fatigue are the factors that most interfere with student concentration in class, resulting in less-than-optimal learning activities. This means that academic burnout in students is caused by a lack of rest time, time management, and self-management when working on assignments, which causes students to have academic burnout. Therefore, academic burnout hurts academic achievement. When experiencing academic burnout, learners do not feel optimistic about learning at school and learning goals will be achieved. They also doubt that their current learning efforts will yield good results in the future. The findings revealed by Azila-Gbette et al. (2023) stated that academic burnout has an insignificant effect on optimism. Yaghoobi et al. (2019) mentioned that the negative impact is caused by low commitment and enthusiasm for learning in students. Competition among academic learners also makes for a driving factor for academic fatigue. Harahap et al. (2022) explained their findings that competition between friends will increase academic fatigue in learners. Anne et al. (2022) also found that a high academic load will cause mental fatigue.

Teuber et al. (2021) asserted that if high academic demands accompany academic fatigue in learners, they will need to maintain an optimistic outlook. This then makes learners not confident in their academic achievements. However, when they do not have

academic burnout, learners are confident that their academic goals will be achieved through learning at school. Then, they also try to give positive results from the learning they get at school for the future. [Gordeeva et al. \(2020\)](#) mentioned that a positive, active school environment and passionate learners can develop learners' optimistic beliefs. Then, learners also have a favorable view of failure as an opportunity to grow and develop. Finally, learners strongly believe there is a correlation between learning effort and academic results. This means that an optimistic attitude in learners boosts academic achievement. [Beyooki et al. \(2020\)](#) confirmed that an optimistic attitude can increase achievement over time. Then, statistical testing shows that optimism fails to mediate the relationship between academic burnout and academic achievement. This indicates that even though students have an optimistic attitude, they still experience academic burnout. This is due to academic burnout factors such as excessive assignments, lack of time management in assignments, and doubts about their academic abilities. The existence of high academic demands and academic competition between friends can significantly reduce optimistic attitudes in students ([Anne et al., 2022](#); [Teuber et al., 2021](#)).

### **Internet Addiction, Optimism, And Academic Achievement**

Internet addiction has a positive impact on students' academic achievement. Learners use the Internet as a source of learning material to achieve academic success. For example, learners use the Internet to find information that supports learning, find entertainment, and learn new things. Then, learners also use the Internet to get diverse information and support their points of view. This is in line with the findings of [Iyitoğlu & Çeliköz \(2017\)](#), which state that the use of the Internet that helps students in academic activities can positively impact their academic achievement. Then [Garmah \(2023\)](#) also provides information that using the Internet for academic purposes influences students' academic achievement. This finding is confirmed by [Alshalawi \(2022\)](#) that high internet use can positively impact learners' academic achievement.

Furthermore, learners feel relaxed when not using it for a while and can enjoy leisure time without continuing to use the Internet. This shows that learners have good time management skills when using the Internet positively. However, ([Kapita et al. 2022](#); [Patil & Raddi 2022](#)) provide different assumptions that internet use can lead to low academic achievement. Internet addiction has a positive and significant influence on optimism. Findings from the inner model suggest that students have positive expectations of internet use. Positive self-control over internet use encourages students' optimistic attitudes. Examples of positive internet use are as a learning resource and a medium for students' entertainment. According to [Drozd et al. \(2014\)](#), the frequency of internet use raises expectations of positive outcomes from students. Then, [Prambayu & Dewi \(2019\)](#) found that the positive influence of internet use can reduce stress and help develop positive relationships.

Furthermore, an optimistic attitude towards the positive impact of internet use mediates the relationship between internet addiction and academic achievement. The Internet, which learners use to improve the quality of learning, provides an optimistic factor in achieving academic achievement. Furthermore, learners seek information that supports their viewpoint and provides cheerful, helpful entertainment. This helps increase knowledge and understanding of various topics and facilitates self-learning activities. [Rabeaa et al. \(2023\)](#) argue that an optimistic attitude positively impacts internet use, providing benefits in reducing internet addiction. [Çikrikçi \(2019\)](#) argues that optimism mediates students' academic achievement. This is in line with [Putri et al. \(2022\)](#), who state that Internet use positively impacts academic achievement in students. [Sulaiha et al. \(2021\)](#) mentioned that the Internet provides information that can support student learning. Meanwhile, [Zlatkin-Troitschanskaia et al. \(2021\)](#) also argue that



students who use the Internet as a learning resource have high motivation and learning achievement. Therefore, students are optimistic about the existing internet access as their academic support.

## CONCLUSION

In practical terms, the research shows that academic burnout negatively impacts learners' academic performance. Although students feel excited to go to school, the number of tasks given impacts learners' academic burnout. Then, learners believe that effort in learning directly affects the results achieved at school, but beliefs can lead to academic burnout. Thus, academic burnout hurts academic performance, feelings of hopelessness, and decreased self-confidence. However, internet addiction is vital to learners' daily activities, from finding learning resources to connecting with the community. Despite occasional difficulties, effort in learning directly impacts academic success, with the target of getting a grade of 85 or higher. Therefore, effective task management can help reduce students' physical and mental fatigue levels. Then, teachers also realize that internet use has become part of everyday life, especially in finding sources and getting supporting information in learning.

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