

THE INFLUENCE OF LEARNING MOTIVATION AND LEARNING ENVIRONMENT QUALITY ON ACADEMIC ACHIEVEMENT OF GEN Z STUDENTS

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Abstract

The advancement of information and communication technology in the globalization era has significantly transformed higher education, especially in adapting to Generation Z students who are highly familiar with digital technology. These students require interactive, technology-based learning approaches, as conventional methods often fail to sustain their concentration and motivation. This study investigates the impact of two key factors learning motivation and the quality of the learning environment on academic performance. Conducted on 145 Generation Z students from the Management Study Program at STIE YAPAN Surabaya (2nd, 4th, and 6th semester), this research employs a quantitative approach using multiple regression analysis. The sampling technique used is a census, with data collected through primary questionnaires. Findings indicate that both learning motivation and the quality of the learning environment have a positive and significant effect on students' academic achievement. In other words, academic success relies on both internal drive and external support, especially for Generation Z, who are highly responsive to their surroundings. These factors work together to enhance learning outcomes.

Keywords: Academic Performance of Students, Generation Z, Learning Motivation, Learning Environment Quality

INTRODUCTION

As information and communication technology keeps advancing so quickly in today's globalized world, it's making a big difference in all areas of life, especially in education. Higher education institutions face major challenges in adapting their systems and learning processes to the characteristics of new generation students, namely Generation Z. Gen Z students are a generation that was born and grew up alongside digital technology advancement, making them very familiar with mobile devices, the internet, and social media. On one hand, this condition provides great opportunities in accelerating access to information and knowledge; however, on the other hand, it also poses unique challenges in terms of concentration, learning focus, and academic motivation.

Gen Z students have multitasking tendencies but are also easily distracted. Conventional academic activities such as listening to lectures in class or reading textbooks

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are often considered boring if not combined with interactive and technology-based approaches. This can lead to decreased student engagement in learning and impact on suboptimal academic achievement. In this context, higher education institutions need to adjust learning strategies to match the learning style and psychological needs of Gen Z students. This adjustment includes innovation in teaching methods, provision of supportive learning environments, and approaches that can enhance student learning motivation.

Learning motivation represents one of the central elements in academic success. Motivation drives individuals to act, persist in facing difficulties, and achieve certain goals (Juita, 2023). In the educational context, learning motivation is classified into two categories: intrinsic motivation and extrinsic motivation (Eliza et al., 2023; Sumarni, 2023). Intrinsic motivation comes from within the individual, such as curiosity, desire to master a field of study, and personal satisfaction in completing academic tasks (Winarsih et al., 2024). Meanwhile, extrinsic motivation stems from external factors, including material rewards, social recognition, or the drive to obtain better jobs. Several studies show that intrinsic motivation is more sustainable and has a positive impact on long-term academic achievement (Efriza et al., 2020; Islamiah, 2019). However, many studies have found that motivation, whether intrinsic or extrinsic, does not necessarily significantly influence learning achievement if not supported by real effort and appropriate learning strategies (Gunawan, 2018; Wijaya & Bukhori, 2017).

Besides learning motivation, the quality of the learning environment further contributes crucially to the overall process in supporting student academic success (Sitepu & Isnayanti, 2021). The learning environment encompasses various aspects, from the availability of physical facilities (such as classrooms, libraries, laboratories, and internet access) to social and psychological aspects, such as relationships between students and lecturers, peer interactions, and academic culture in the campus environment (Winarsih & Hidayat, 2022). A conducive environment can enhance student comfort in learning, strengthen their engagement in academic activities, and encourage better achievement (Adit & Juita, 2021). Conversely, an unsupportive learning environment can cause boredom, stress, and decrease student motivation and interest in learning (Prihatinia & Zainil, 2020).

Indonesian national education, as detailed in the Law No. 20 of 2003 on the National Education System, seeks to nurture students' potential, preparing them to develop into competent and responsible individuals who are faithful, pious, noble, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible

citizens. This goal can only be achieved if the educational process can create a supportive learning atmosphere that pays attention to students' needs holistically. Higher education, as an important part of the national education system, holds a strategic role in forming superior and competitive human resources in the global era. Therefore, special attention is needed for various factors that influence student success in completing their studies.

Pre-research results conducted on 40 Gen Z students from the Management Study Program at the School of Economics (STIE) YAPAN Surabaya show that learning motivation and learning environment are two main factors influencing their academic achievement. Of the total respondents, 96.67% stated that learning motivation is an important factor that drives them to achieve good academic results, while 93.33% acknowledged that the quality of the learning environment affects comfort and success in the learning process. Other factors such as family economics (33.33%), organizational activity (40%), learning methods (46.67%), and learning facilities (36.37%) have lower influence. This finding confirms that focus on motivation and learning environment becomes very relevant for further research.

Academic achievement itself is an important indicator in assessing higher education success. Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) are the main measurement tools used to assess the extent to which students can master, apply, and develop knowledge obtained during their study period. The average GPA of Gen Z students in the Management Study Program at STIE YAPAN Surabaya is 3.5, with an average CGPA of 3.7. Although these values show fairly good academic achievement, it is important to understand deeply the factors contributing to this success, so institutions can formulate more appropriate strategies in supporting students.

Previous research has looked into the influence among learning motivation and learning environment on academic achievement, but the results obtained are still varied. Nafisah et al. (2015) and Efriza et al. (2020) accentuate the value of motivation as the main driver of learning success. However, Gunawan (2018) and Wijaya & Bukhori (2017) found that learning motivation alone is not sufficient without support from external factors and real effort from students. These different results indicate a research gap that needs to be explored further, especially in the context of Gen Z students in Indonesian higher education environments.

In this context, STIE YAPAN Surabaya as a private higher education institution has a great responsibility in improving the quality of its graduates to be able to compete in the job

market. A deeper understanding of factors influencing academic achievement, such as learning motivation and learning environment quality, will be very beneficial in designing educational policies, learning strategies, and more effective supporting facility provision. This research becomes important because it specifically examines these two main factors in the context of Gen Z students in the Management Study Program, which has not been extensively explored in depth in the STIE YAPAN Surabaya environment.

Therefore, this research aims to analyze the influence of learning motivation and learning environment quality on the academic achievement of Gen Z students in the Management Study Program at STIE YAPAN Surabaya. The research findings are anticipated to contribute to advancements in more effective learning strategies and help the institution create an academic environment that supports improving student quality. Additionally, this research is also expected to fill the literature gap related to determining factors of academic achievement in the context of today's digital generation.

The novelty in this research lies in its specific focus on Generation Z students in the Management Study Program at STIE YAPAN Surabaya, who have different learning characteristics compared to previous generations, such as being more responsive to technology, needing flexibility in the learning process, and tending to have varied intrinsic motivation. Unlike previous research that combined various additional variables such as parental motivation (Farida et al., 2021) or infrastructure (Sakti, 2025), this research specifically isolates two main variables that are learning motivation as an internal factor and learning environment quality as an external factor to assess their impact on academic achievement in the context of a unique and dynamic generation. This research also offers contextual contribution to local literature, as the research object has not been extensively studied in the realm of private institutions in Surabaya, especially in Management study programs.

The objectives of this research are to test and analyze empirically the influence of learning motivation and learning environment quality on the academic achievement of Generation Z students at STIE YAPAN Surabaya, both partially and simultaneously. This research hopes to give a better understanding of the extent to which these two variables can explain variation in student academic achievement, and to provide practical recommendations to educational institutions in designing learning strategies more suitable to the characteristics and needs of today's students. It is projected that the findings can become

the basis for policy-making that supports sustainable improvement in higher education quality.

LITERATURE REVIEW

Generation Z

Generation Z, which includes individuals born between 1995 and 2012, is a generation that grew up in an era of rapid digital development. They are known to have high technological capabilities. This makes them very adaptive to technological changes, and this adaptability also includes learning new information and new skills. According to Noordiono (2016), Generation Z is a generation that has been familiar with technology and the internet from an early age, driven by a continuous desire for technological advancements. New technology must be used right away to experience its benefits. Generation Z, also known as the digital generation, relies on technology and tools for growth and development.

Gen Z has several indicators that define them, these indicators are birth year range, the same growing era, and values formed due to the growing era. According to Stillman & Stillman (2017), the following indicators can define Gen Z: (1) Birth year range: Individuals called Gen Z are those born between 1995 to 2012, (2) Growing method: Gen Z grew up in an era where technology developed very rapidly, every year or every month there are new technological innovations. Added with extremely fast information movement. Gen Z grew up in an era that naturally demands high flexibility and adaptability, (3) Character: Growing up in an era where technology develops rapidly and information is extremely fast forms self-values, behavioral patterns, and life goals or expectations. Following are some behavioral patterns and life goals or expectations. Following are some Gen Z characters; (1) Realistic: Having practical views about work and life, (2) Competitive: Gen Z likes to compete in many aspects of life such as work, education, lifestyle, this tends to be influenced by social media. (3) Independent: Gen Z is very independent; this is due to wide access to information. Gen Z is accustomed to learning autodidactically, likes to find alternative solutions and try new things.

Learning Motivation

As noted by Arianti (2019), learning motivation is the drive that exists both within the individual and from outside, which directs them to work hard to achieve academic goals. Motivation that comes from within, known as intrinsic motivation, emerges from understanding or awareness of the importance of the material being studied and personal interest in the subject being studied. Conversely, external motivation comes from external

influences, including encouragement or pressure from family, friends, social environment, or even rewards given when someone successfully achieves certain learning goals (Lina, 2020).

Syafi'i et al. (2018) further noted that in the learning process, motivation functions As a pivotal force shaping the direction of the smoothness and success of the teaching and learning process (Suharni, 2021). High learning motivation not only increases student enthusiasm and persistence in following lessons, but also influences how they understand and overcome the lesson material presented. Effective learning is not only determined by the quality of material presented by lecturers, but also by how students are actively involved in the process, which greatly depends on their level of motivation (Winarsih, 2020). Without motivation, learning will feel more difficult and boring, and optimal learning results become very difficult to achieve. Additionally, intrinsic and extrinsic motivation have complementary roles in supporting student learning success. Intrinsic motivation focuses on individual internal drives, such as curiosity, interest, and awareness of benefits obtained from the learning process itself (Samudra et al., 2023). External motivation, however, emerges from external factors, including parental expectations, peer encouragement, or rewards given by educational institutions, all of which function to strengthen student enthusiasm and determination in achieving their academic goals. When both types of motivation function well, they can create conditions that strongly support learning success, which in turn will improve student learning outcomes.

Various measurable indicators that can provide insights into an individual's level of learning motivation namely (Septianingrum & Fitrayati, 2024): (1) Persistence in undergoing the learning process, (2) Resilience in facing challenges or obstacles in learning, (3) Independence in carrying out learning activities, (4) Pleasure in finding solutions and solving problems faced.

Learning Environment Quality

The learning environment is an important factor influencing learning process effectiveness, encompassing physical, social, and emotional aspects (Fitriani, 2018). A conducive environment not only supports achieving academic goals, but also increases motivation, comfort, and active student participation in learning activities (Damanik, 2019; Widyastuti & Airlanda, 2021; Winarsih, 2021). Positive relationships between students and lecturers in an open and inclusive atmosphere will facilitate more effective interaction and enhance understanding of material (Sukma et al., 2020).

According to Zahara et al. (2023) and Husnah et al. (2023), an ideal learning environment must include adequate physical and social support, and encourage a sense of togetherness and tolerance among individuals. This is reinforced by Ferdinand & Wahyuningsih (2018) who state that environments that value diversity enrich learning experiences and build healthy social relations. Yusuf et al. (2022) adds that the learning environment is a dynamic system that mutually influences individuals and the context where learning takes place, including facility quality, spatial comfort, and noise levels.

Besides the physical environment, social environments such as relationships among students and lecturers, discipline, and family support also contribute to academic success (Muslimin et al., 2021; Trianah & Sahertian, 2020). Social interaction and activities outside class, including student organizations, also strengthen student engagement in learning. Therefore, the learning environment not only serves as the background where learning takes place, but as a system that actively influences student academic achievement (Rahmi et al., 2019).

The indicators of learning environment quality include: (1) Campus Facilities, such as classrooms, laboratories, and libraries, which support the smooth learning process. (2) Building Conditions, including cleanliness, lighting, and ventilation, which affect comfort and concentration. (3) Lecture Atmosphere, namely academic climate that builds active interaction between lecturers and students, and encourages involvement in discussion and problem-solving.

Academic Achievement

Academic achievement is the concrete result of the learning process undertaken by students in formal education. In Indonesian, academic achievement or *prestasi akademik* derives from "*prestasi*," meaning accomplishment, and "*akademik*," referring to activities that are scientific or educational in nature. Within the higher education, academic achievement reflects the level of student mastery of lecture material, as well as their success in meeting established academic standards (Arifin & Muluk, 2016).

Suryabrata et al. (2016) emphasizes that academic achievement is usually measured in the form of specific numbers or symbols, such as final grades, Cumulative Grade Point Average (CGPA), or semester exam results. This assessment provides an overview of the extent to which students master competencies taught in the curriculum. Nevertheless, academic achievement does not merely describe cognitive results, but also reflects students' ability to apply knowledge obtained in real life and in social contexts.

Academic achievement is shaped by several key elements at play, both from within individuals and from outside the student environment. In the framework of social cognitive theory, achievement is not only seen as a result of intelligence or cognitive ability alone, but is the result of complex interaction between internal and external factors. Self-perception, expectations of success, task assessment, and motivation play important roles in shaping how students face academic challenges. Students with positive self-perception tend to have high confidence in their ability to complete academic tasks. This directly impacts their level of effort and persistence in learning (Susiloningsih & Munadi, 2023). Conversely, students with negative perceptions of their own abilities are more vulnerable to experiencing demotivation and decreased academic performance. External factors such as parenting style, socioeconomic background, and gender also influence academic achievement. Parents who support emotionally and intellectually can create a positive learning climate at home, while access to educational resources such as books, internet, and other learning facilities, which often depends on family economic status, determines the quality of student learning experiences (Wahyuningsih & Mua'dib, 2023).

To measure academic achievement comprehensively, this research uses five main indicators that reflect the dimensions of knowledge, skills, and student attitudes toward learning. First, knowledge, which includes understanding and application of lecture material, including academic concepts, theories, and practices. Second, emotional regulation, namely students' ability to manage stress and academic pressure to remain focused and productive. Third, academic skills, such as scientific writing, presentation, and utilization of learning technology. Fourth, intellectual ability, which reflects critical and analytical thinking ability in problem-solving. Fifth, positive attitude toward learning, which is seen from motivation, activeness in class, and enthusiasm to continue developing.

RESEARCH METHODS

This research uses a quantitative approach with the aim of analyzing the influence of learning motivation and learning environment quality on the academic achievement of Generation Z students in the Management Study Program at STIE YAPAN Surabaya. The method used in this research is multiple linear regression analysis. In implementation, the regression model is built with the help of statistical software such as SPSS, Microsoft Excel.

Primary data collection is utilized in this study, involving researchers gathering information directly from the original source. Primary data is considered more relevant and accurate because it is obtained directly from respondents without going through third parties.

In the context of this research, primary data is obtained through questionnaire distribution to Generation Z students in the Management Study Program at STIE YAPAN Surabaya. The questionnaire is designed as the main data collection instrument and consists of a number of structured questions aimed at revealing information about learning motivation variables (X1), learning environment quality (X2), and student academic achievement (Y). Data analysis is conducted using multiple linear regression techniques, which allows researchers to identify the significance of influence of each independent variable (IV) on the dependent variable (DV), and measure their simultaneous contribution to student academic achievement.

RESULTS AND DISCUSSION

Respondent Characteristics

Grounded in the data obtained, the number of respondents in this research is classified by gender. Of all respondents, 65 people (44.83%) are male, while 80 people (55.17%) are female. This composition shows that the proportion of female respondents is higher than male. Information regarding gender distribution is relevant to provide context for data analysis, especially if there are variables influenced by demographic factors, including gender.

Table 1. Respondent Distribution

Category	Sub-Category	Number (people)	Percentage (%)
Gender	Male	65	44.83
	Female	80	55.17
Semester	2 nd Semester	52	35.86
	4 th Semester	47	32.41
	6 th Semester	46	31.72
Age Range	15-20 years	60	41.38
	21-25 years	85	58.62
Total		145	100

Based on respondent data per semester obtained in this research, 52 people (35.86%) are semester 2 students, 47 people (32.41%) are from semester 4, and 46 people (31.72%) are semester 6 students. This distribution shows that the three semester groups have relatively balanced proportions, although semester 2 students are slightly more dominant. Classification based on semester is important for further analysis, considering that semester level can influence experience level, material understanding, and thinking maturity that may impact responses to research variables.

Based on age range data obtained, the number of respondents in this research shows that respondents aged 21-25 years are the most dominant age group, namely 85 people

(58.62%). Meanwhile, respondents in the age range of 15-20 years number 60 people (41.38%). This distribution indicates that most respondents are in the early adult age range, which is generally characterized by higher levels of maturity and thinking maturity compared to the late adolescent age group. This can influence their perspectives, attitudes, and understanding of the researched topic. Therefore, classification based on age becomes an important aspect in analyzing and interpreting research results more comprehensively.

Classical Assumption Tests

1. Validity Test Results

The validity verification in this study was executed using the Pearson Product Moment correlation technique, where a statement item is said to be valid if it meets one of two criteria, namely the r value $> r$ table or significance value (Sig.) < 0.05 . Based on the analysis results, all items on each variable in this research show significance values (Sig.) of < 0.001 . Because the significance value is far $<$ the established significance limit ($\alpha = 0.05$), all items in the research instrument can be declared statistically valid. Thus, direct comparison to the r table value is no longer needed because validity requirements have been met through very strong significance values ($p < 0.001$). These results show that each statement item in the research instrument is able to measure the intended variable validly and accurately.

2. Reliability Test Results

The reliability test in this research has Cronbach's Alpha values above 0.60, indicating that the instruments used to measure learning motivation, learning environment quality, and academic achievement are reliable. This value reflects adequate internal consistency, so the obtained data is suitable for use in further analysis.

3. Normality Test Results

The Kolmogorov-Smirnov test results in this research show that Asymp. Significant has a value greater than 0.05, namely 0.200. Therefore, it is evident that the data follows a normal distribution and therefore suitable for use in this research.

4. Multicollinearity Test Results

If tolerance value > 0.10 or VIF value < 10 , then it passes the multicollinearity test. If tolerance value < 0.10 or VIF value > 10 , then it does not pass the multicollinearity test. In this research, it shows that all variables have tolerance values of $0.660 > 0.10$ and VIF values of $1.515 < 10$, means no sign of multicollinearity exist.

5. Heteroscedasticity Test Results

If Sig. value > 0.05 , then it passes the heteroscedasticity test. In this research, heteroscedasticity test results show that all variables have Sig. values > 0.05 , this confirms that there are no indications of heteroscedasticity, meaning the model passes the test.

6. Multiple Linear Regression Analysis Results

In this section, the multiple regression equation is explained as follows:

- a. The constant value (α) has a positive value of 11.632. A positive value means it shows a directly proportional influence among IV and DV. This shows that if all IV including learning motivation (X1) and learning environment quality (X2) are valued at 0 percent or do not change, then the academic achievement value is 11.632.
- b. The regression coefficient value for learning motivation variable (X1) is 0.534. This value shows a directly proportional influence between learning motivation variable (X1) and academic achievement (Y). This means that if learning motivation variable (X1) increases by 1%, then academic achievement variable will also increase by 0.534. Assuming other variables remain constant.
- c. The regression coefficient value for learning environment quality variable (X2) is 0.573. This value shows a directly proportional influence between learning environment quality variable (X2) and academic achievement (Y). This means that if learning environment quality variable (X2) increases by 1%, then academic achievement variable will also increase by 0.573. Given that other variables remain unchanged.

7. R Square Test Results

Based on the coefficient of determination test results in this research, an adjusted R-square value of 0.654 (65.4%) was obtained. This signifies that the ability of IV in this research to influence DV is 65.4%, while the remaining 34.6% ($1 - 0.654$) is accounted for by other variables beyond those examined in this study.

8. F Test Results

If F value $> F$ table or Sig < 0.05 , then the regression model can be considered significant. From the analysis results in this research, it is explained that the F value is 137.226 $> F$ table value which is 3.059 and Sig value is $0.001 < 0.05$. This shows that the built regression model is statistically significant. This leads to the conclusion that learning motivation variables (X1) and learning environment quality (X2) collectively have a major impact on academic achievement (Y). Hence, the higher the learning motivation and the

better the quality of learning environment possessed by students, the higher the academic achievement that can be achieved.

9. T Test Results

Partially, t-test results show that learning motivation (X1) and learning environment quality (X2) significantly influence the academic achievement of Gen Z students (Y). This is shown by the t value of X1 at 8.818 and X2 at 6.254, both $> t$ table (1.976), and significance values of each < 0.05 . Thus, the higher the learning motivation and the better the learning environment quality, the higher the academic achievement of Gen Z students.

Discussion

Learning Motivation on Academic Achievement of Gen Z Students

To delve further into the topic, the results of this research confirm that learning motivation is one of the main determinants in determining the academic success of Generation Z students. Statistically, the positive and meaningful association among learning motivation and academic achievement shows that when students have strong learning drives whether intrinsic such as curiosity, interest in material, or desire for personal development, they tend to show better academic performance. This becomes increasingly important in the context of Generation Z students who grew up in a digital ecosystem with very high technology exposure, which on one hand facilitates access to information but on the other hand also increases potential distractions. In this context, learning motivation becomes a kind of internal defense that enables students to filter out distractions and remain focused on academic processes.

Learning motivation is not a single entity, but a multidimensional construct that includes aspects such as self-efficacy (belief in learning ability), self-regulation (ability to manage time and learning strategies), to goal orientation (whether students focus more on material mastery or just pursuing grades). Each dimension has implications for how students arrange their learning strategies whether they tend to learn deeply, strategically, or just superficially (surface learning). Hence, improving learning motivation should not only focus on cognitive aspects, but also affective and social ones.

Practical implications of this finding demand more attention from higher education institutions to create learning environments that facilitate the specific needs of Gen Z. Instructional approaches that meaningfully integrate digital technology such as using interactive media, project-based learning, flipped classrooms, and gamification can foster relevant and challenging learning experiences. Additionally, psychosocial aspects such as

providing timely feedback, recognition of learning efforts, and creating collaborative and supportive atmospheres also strengthen student intrinsic motivation. Thus, not only will academic performance improve, but also their resilience and readiness to face future learning challenges. The alignment of this finding with previous studies (Manurung, 2019; Sidabutar, 2020) further strengthens the argument that learning motivation-based interventions deserve to be a strategic priority in developing learning systems in the digital era.

Learning Environment Quality on Academic Achievement of Gen Z Students

Research results show that learning environment quality variable (X2) has a significant influence on the academic achievement of Generation Z students. This finding reflects the importance of learning environment as a determining factor in supporting student academic achievement in the digital era. Learning environment quality is comprehensively understood, encompassing physical aspects such as availability of adequate learning facilities and infrastructure, comfortable lecture rooms, sufficient lighting, good air circulation, and environmental cleanliness (Suhartono et al., 2024). Additionally, psychosocial aspects play a substantial role, including harmonious interpersonal relationships between lecturers and students, academic climate that supports collaboration, and learning culture that encourages active participation and academic dialogue.

Generation Z students, who generally have characteristics as active users of digital technology, show tendencies to be more responsive to learning environments that are adaptive, interactive, and technology-based. Therefore, higher education institutions are required to develop relevant learning ecosystems, including through utilizing modern learning technology, providing digital facilities, and improving lecturer pedagogical competence to be able to apply instructional approaches suitable to the characteristics of this generation. Visual, collaborative, and flexible learning has proven to enhance learning engagement and student academic motivation.

This finding aligns with research results conducted by Zahara et al. (2023), which concluded that learning environment, both physically and socially, has a significant relationship to improving student academic achievement. Similar findings are confirmed by Zannah (2024) who emphasizes the importance of learning facility availability and lecture room comfort in supporting academic achievement. Based on this description, it can be concluded that developing holistic learning environments that integrate physical and psychosocial aspects in balance is an essential strategy in efforts to improve academic quality of Generation Z students in higher education.

Learning Motivation and Learning Environment Quality on Academic Achievement of Gen Z Students

Regression analysis results showing that learning motivation and learning environment quality variables simultaneously provide significant influence on student academic achievement indicate that academic success does not only depend on individual internal aspects, but it's also influenced by outside systemic factors. Learning motivation, as an intrinsic factor, reflects students' internal drive to achieve desired academic goals. Meanwhile, learning environment quality, as an extrinsic factor, encompasses various supporting elements such as facility availability, learning space comfort, support from teaching staff, and the presence of adaptive learning technology.

This finding is consistent with the ecopsychological approach in education that emphasizes that learning processes do not occur in a vacuum, but exist within environmental contexts that mutually influence each other. In the context of Generation Z students who have digital, collaborative characteristics and tend to learn independently and technology-based, learning environments that can respond to these needs optimally are needed. High motivation without adequate learning environment support will lose its effectiveness in encouraging academic achievement. Similarly, good learning environments will not provide significant impact if not accompanied by internal motivation from students.

Higher education institutions need to design comprehensive and integrative interventions (Fariz & Winarsih, 2024). Educational quality improvement strategies should not only focus on cognitive aspects through teaching methods, but also include strengthening affective aspects and environment. Efforts that can be made include providing student psychological capacity development programs, creating comfortable and inclusive campus environments, and utilizing digital technology that is relevant and suitable to the characteristics of today's students. This holistic approach is seen as capable of increasing learning engagement, reducing academic stress levels, and encouraging optimal academic achievement, as confirmed in Sakti (2025) which highlights the importance of synergy between motivation and learning environment in supporting higher education success

CONCLUSION

The evidence gathered clearly demonstrates that learning motivation and learning environment quality have significant simultaneous influence on student academic achievement. This finding confirms that academic success is not only determined by internal factors such as learning motivation that drives students to be active and persistent in the

learning process, but also highly depends on external factors in the form of conducive learning environment quality that supports student academic needs. This is especially relevant for Generation Z students who have adaptive learning styles and are strongly influenced by the atmosphere and learning facilities around them. Therefore, this research results strengthen understanding that these two variables complement each other in creating optimal conditions for improving academic achievement.

As suggestions, higher education institutions should design and implement holistic learning policies by integrating learning motivation strengthening through various soft skills development programs, such as time management training, self-motivation, and positive mindset formation. Additionally, it is also important to improve learning environment quality through adequate facility provision, comfortable classroom atmosphere creation, supportive interactions between lecturers and students, and utilization of learning technology suitable to Generation Z student characteristics. Practical implications of this research demand collaboration between institutional managers, lecturers, and students to create academic environments that are not only technically effective but also psychologically capable of encouraging sustainable achievement improvement. Thus, an integrated approach between motivation and learning environment will become the main key in improving higher education quality and success.

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