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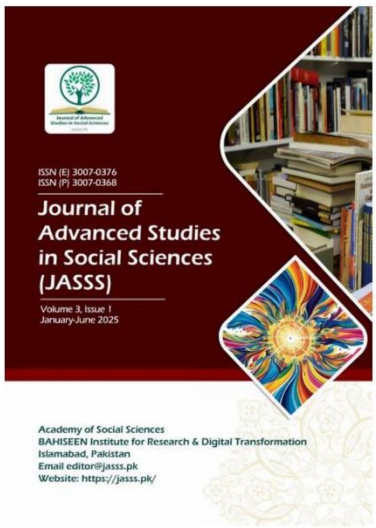

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The Relationship Between Academic Self-Efficacy, Psychological Well-Being and Academic Engagement Among University Students: Evidence from Zambia

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Abstract

The purpose of the study was to investigate the relationship between academic self-efficacy, psychological well-being, and academic engagement among university students, and to determine whether academic self-efficacy and psychological well-being have predictive value for academic engagement. A cross-sectional survey design was used in this study with a convenient sample of 70 (N=70). Three measuring instruments were used to collect data: the General Self-Efficacy Scale, the 8-item Psychological Well-Being Scale, and the University Student Engagement Inventory. Pearson correlation and regression analysis were used to analyze the data. Significant positive relationships were found between academic self-efficacy and psychological well-being, academic self-efficacy and academic engagement, as well as between psychological well-being and academic engagement. Finally, the research findings showed that only psychological well-being had predictive value for student engagement. Therefore, institutions of higher learning should tailor learning programs and policies to address this relationship.

Keywords: Academic self-efficacy, Psychological well-being & Academic engagement

1. Introduction

Academic success is of paramount importance for university students, as it directly influences their future career prospects and overall life trajectory (Alves, Rodrigues, Rocha, & Coutinho, 2016). The attainment of academic achievement, in terms of high grades and continuous progression, is contingent upon a student's level of academic engagement (Maroco, Marco, Campos, & Fredricks, 2016). Engaged students are those who invest substantial cognitive and behavioral effort into their academic endeavors, participate more fully in institutional activities, and cultivate adaptive mechanisms for self-

regulating their learning and achievement (Klem & Connell, 2004). Student engagement refers to the time, energy, and effort that students dedicate to participating in educationally purposeful activities, both within and outside the classroom (Cheong & Ong, 2016; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). These activities encompass a broad spectrum, including strong study habits, regular attendance, active participation in academic challenges, meaningful interactions with faculty and staff, and involvement in extracurricular pursuits such as sports and student organizations (Cheong & Ong, 2016).

The significance of student engagement cannot be overstated, as it serves as a critical antidote to low academic achievement, student burnout, lack of resilience, dissatisfaction, and the risk of school dropout (Christenson & Reschly, 2010; Elmore & Huebner, 2010; Finn & Zimmer, 2012; Wang & Eccles, 2012; Krause & Coates, 2008). Moreover, student engagement is positively associated with favorable social outcomes, higher graduation rates, and a substantial return on investment in higher education (Klem & Connell, 2004; Breso, Schaufeli, & Salanova, 2011; Christenson & Reschly, 2010; Kuh, 2009; Salmela-Aro et al., 2009). Students who exhibit higher levels of engagement are generally better integrated both intellectually and socially into their academic institutions compared to their less engaged peers (Tinto, 1993). This engagement fosters a sense of belonging, acceptance, and institutional identity. Furthermore, according to Chen & Astor (2011), Christenson, Reschly & Wylie (2012), Gilardi & Guglielmetti (2011), and Reschly & Christenson (2012), student engagement mediates the relationship between extrinsic factors, teacher-student interactions, academic achievement, school success, and lifelong learning. Studies by Li & Lerner (2011) and Wang & Eccles (2012) have established that varying profiles of student engagement correlate with positive outcomes in learning, physical health, psychological well-being, and overall student welfare. Given the essential role of student engagement in academic success and graduation outcomes, it is crucial to investigate the factors that promote effective engagement. A variety of predictors of student engagement have been identified in the extant literature, including self-efficacy and psychological well-being (Surahman & Adhim, 2021). Students who possess a strong sense of academic self-efficacy defined as the belief in their ability to succeed are more likely to engage both cognitively and behaviorally with their educational environment (Sokmen, 2019). Similarly, psychological well-being, characterized by positive emotional states, is a vital contributor to fostering student engagement (Surahman & Adhim, 2021).

Other antecedents of student engagement, as outlined in the literature, include classroom emotional processes (Mazer, 2016), personal resources (Bakker, Sanz Vergel & Kuntze, 2015), academic climate (Smerdon, 2002), and demographic factors such as class, race, and participation in extracurricular activities (Hawkins & Mulkey, 2005; Mickleson, 1990). However, while numerous predictors of engagement have been discussed, both practical and theoretical considerations necessitate the selection of a focused set of variables for analysis. Two key criteria informed the selection of the current study's focus: the identification of well-established antecedents of student engagement and a review of relevant literature to guide future research directions. Consequently, academic self-efficacy and psychological well-being were identified as the key variables to be explored in the present study.

1.1 RESEARCH INITIATING QUESTION

The research initiating question for study is therefore: why variance exists in student academic engagement, with specific reference to the role that psychological well-being and academic self-efficacy play in this regard not to the exclusion of other predicting

variables. Answers to this research question will provide insights of how the two predictors relate and influence academic engagement.

1.2. RESEARCH OBJECTIVES

1. To examine the empirical relationship between academic self-efficacy, psychological well-being and academic engagement
2. To determine if academic self –efficacy and psychological well-being are predictors of academic engagement

2. LITERATURE REVIEW

2.1. Student Engagement Theory

The Student Engagement Theory serves as the conceptual foundation for this study, providing a lens through which to understand the relationship between school inputs and academic achievement. This theory is instrumental in examining university students' experiences with school, encompassing their thoughts, emotions, and behaviors (Nesbitt, 2011). Rooted in Finn's (1989) model, the theory posits that academic success is contingent upon both affective and behavioral engagement, with some researchers also incorporating a third dimension: cognitive engagement. According to this model, students' motivation to engage is influenced by their affective identification with the institution (Nesbitt, 2011). The affective dimension of engagement includes variables such as a sense of belonging, valuing academic success, and students' emotional responses toward school, teachers, and peers (Nesbitt, 2011). Behavioral engagement encompasses actions such as school attendance, homework completion, involvement in extracurricular activities, and participation in institutional decision-making (Finn, 1989; Nesbitt, 2011). Cognitive engagement, the third dimension, refers to students' understanding of the relevance of their academic work to real-world contexts and future aspirations, including the intrinsic value they place on learning and the strategies they develop to break down complex tasks for success (Nesbitt, 2011).

2.2. Conceptualizing Student Engagement

Student engagement is conceptualized as the individual's drive to perform specific tasks and their intention to continue involvement in educational activities (Surahman & Adhim, 2021). It is commonly viewed as the student's willingness to participate in routine academic activities, including attending classes, completing assignments, and adhering to teacher directives (Nystrand & Gamoroh, 1992; Maroco, Marco, Campos & Fredricks, 2016). Kuh (2009) defines student engagement as a construct that explains the quality of learning experiences and the extent of students' involvement in productive academic activities. It is a critical indicator of how well students adjust to university life and is strongly linked to their academic investment and achievement (Sinval, Casanova, Maroco & Almeida, 2013).

Engagement is typically framed as a multidimensional construct encompassing cognitive, emotional, and behavioral components. Cognitive engagement refers to students' investment in understanding and mastering complex ideas and skills, reflecting their willingness to exert the necessary effort to achieve academic goals. Emotional engagement pertains to students' positive or negative emotional responses to teachers, peers, and their overall perceptions of school and its value (Maroco, Campos & Fredricks, 2016). Behavioral engagement, on the other hand, captures the observable actions of students, such as participation in class, completion of academic tasks, and involvement in extracurricular activities (Finn, 1989).

2.3. Conceptualizing Psychological Well-being

Psychological well-being encompasses a holistic view of health, including social, physical, and mental dimensions (Kirkwood, Bond, May, McKeith & Teh, 2010). It represents a life lived to its fullest, where individuals maximize their potential and experience autonomy, positive relationships, and self-acceptance (Ryff, 1989 as cited in Li, 2015). Psychological well-being is conceptualized as optimal psychological functioning, characterized by six dimensions: self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989). Self-acceptance reflects an individual's ability to accept their current and past self as a whole (Esterina, Silvi, & Rahmawati, 2020). Positive relationships with others are defined by warm, trusting, and satisfying connections (Ryff, 1989). Autonomy refers to an individual's ability to make independent decisions and chart their own path, while environmental mastery involves the capacity to manage and control one's surroundings in a way that aligns with personal needs and goals (Esterina et al., 2020). Purpose in life denotes a clear sense of direction, with life being meaningful both in the past and present (Esterina et al., 2020). Personal growth refers to the continuous desire for self-improvement and development, emphasizing an ongoing commitment to personal growth (Ryff, 1989).

2.4. Conceptualizing Academic Self-efficacy

Academic self-efficacy is defined as an individual's belief in their ability to overcome academic challenges (Walker & Greene, 2009). Specifically, academic self-efficacy pertains to students' confidence in their capability to perform the necessary tasks to achieve academic success (Chang & Chieng, 2015; Dogan, 2015). Schunk and Muller (2012) describe academic self-efficacy as a belief in one's ability to organize and execute the actions required to master academic tasks. Academic self-efficacy plays a critical role in learning, as it influences students' choices of activities and the amount of effort they invest in them.

2.3. The Relationship between Academic Self-efficacy and Psychological Well-being

Optimal psychological functioning in academic contexts can only be realized when students possess the self-confidence required to attain their academic goals. Students with high levels of academic self-efficacy typically exhibit lower levels of anxiety, higher motivation, and a proactive problem-solving orientation, all of which contribute positively to their psychological well-being (Tang & Zhu, 2024). Numerous studies have demonstrated a positive association between academic self-efficacy and psychological well-being (Costa et al., 2013; Garcia-Alvarez et al., 2021; Hong et al., 2022; Matteucci & Soncini, 2021; Salami, 2010; Siddiqui, 2015).

2.4. The Relationship between Academic Self-efficacy and Academic Engagement

An individual's capabilities are key determinants of their behaviors, perseverance in the face of obstacles, effort levels, thought processes, and emotional reactions (Bandura, 1986; Sokmen, 2019). Students with high academic self-efficacy tend to demonstrate higher levels of engagement, both cognitively and behaviorally, compared to their peers (Linnenbrink & Pintrich, 2023). Hidiroglu (2014) found that self-efficacy beliefs were significant predictors of cognitive, emotional, and behavioral engagement among science students. Similarly, a meta-analysis by Chang and Chieng (2015) confirmed the existence of a positive relationship between academic self-efficacy and student engagement. A study conducted by Luo et al. (2023) among Chinese college students also identified a positive correlation between academic self-efficacy and learning engagement.

2.5. The Relationship between Psychological Well-being and Academic Engagement

When psychological well-being is established, particularly through academic self-efficacy, students are more likely to engage in schoolwork at cognitive, emotional, and behavioral levels. In Huo's (2022) study, subjective well-being was found to significantly predict school engagement. Heffner and Antaramian (2016) also reported that components of psychological well-being served as predictors of student engagement.

3. METHODS

A cross-sectional quantitative research design was employed in this study to investigate the relationships between academic self-efficacy, psychological well-being, and academic engagement among university students. A non-probability sampling technique, specifically the convenience sampling method, was utilized to select the participants for the study. The target population comprised all university students at a selected university. A total of 150 online questionnaires were distributed via a web link, resulting in 70 completed responses. The sample consisted of 39 male participants (55.7%) and 31 female participants (44.4%). In terms of age distribution, the largest proportion of participants fell within the age range of 20 to 22 years, while the smallest proportion was observed in the age group of 29 years and above.

Measuring Instruments

1. Academic Self-efficacy: Academic self-efficacy was assessed using the General Academic Self-Efficacy Scale (GASE) with five items using a five point likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Van Zyl et al., 2022; Nielsen, Dammeyer, Vang, & Makransky, 2018). The scale has demonstrated an acceptable internal consistency, with a Cronbach's alpha coefficient of 0.81 (Akanni & Oduaran, 2018).
2. Psychological Well-being: Psychological well-being was measured using the eight-item Psychological Well-Being Scale (Diener et al., 2010). This scale has exhibited high internal consistency, with a Cronbach's alpha of 0.87 (Diener et al., 2010).
3. Academic Engagement: Academic engagement was measured using the University Student Engagement Inventory on a five point point likert scale ranging from 1 (not good at al) to 5 (very good)(Maroco et al., 2016). This scale demonstrated robust reliability, with a Cronbach's alpha value of 0.88.

Data Analysis

Descriptive statistics, reliability analysis, factor analysis, normality tests, Pearson correlation, and regression analysis were conducted using SPSS version 28 to analyze the data.

Reliability Analysis

To assess the internal consistency of the measuring instruments used in this study, Cronbach's alpha coefficients were computed. The results indicated that, generally, the reliability of the scales was satisfactory. Two out of the three scales met the benchmark reliability standard of $\alpha \geq 0.70$ (Nunnally & Bernstein, 1994; Pallant, 2010). Specifically, the psychological well-being scale and the University Student Engagement Inventory both demonstrated acceptable reliability, with Cronbach's alpha values of 0.785 and 0.804, respectively. However, the academic self-efficacy scale yielded a lower reliability coefficient of 0.565, which represents a limitation of the study. These results are presented in Table 1.

Correlation and Regression Analysis

To explore the linear relationships between the three variables, Pearson correlation coefficients were calculated (Maxwell & Moores, 2007). Total scores for each variable were computed and used in the correlation and regression analyses. Following Cohen's (1988) guidelines for interpreting correlation coefficients, significance was set at $p \leq 0.05$, with r values categorized as follows: small correlations ($0.10 \leq r < 0.29$), medium correlations ($0.30 \leq r < 0.49$), and large correlations ($0.50 \leq r \leq 1.00$). The Pearson correlation results, as presented in Table 1, revealed the following key findings:

- A strong positive relationship was found between academic self-efficacy and psychological well-being ($r = 0.503$; $p < 0.01$), indicating a large practical effect.
- A positive, though small, relationship was identified between academic self-efficacy and academic engagement ($r = 0.237$; $p < 0.05$).
- A moderate positive correlation was observed between psychological well-being and academic engagement ($r = 0.395$; $p < 0.01$), representing a medium practical effect.

Table1: Inter-construct correlations

Scale	Mean	SD	1	2	3
General self-efficacy scale	16.40	2.46	**0.565**		
Psychological well-being scale	26.67	4.54	0.503**	**0.785**	
University Student engagement Inventory	60.00	13.55	0.237*	0.395**	**0.804**

Note: Cronbach's alpha coefficients are presented diagonally and in bold. 1= academic self-efficacy, 2 =psychological well-being, 3= academic engagement. N=65, SD, standard deviation.*, $p < 0.05$; **, $p < 0.01$.

Multiple regression analysis was conducted to examine the extent to which academic self-efficacy and psychological well-being predict academic engagement. The results of the model summary for the regression analysis are presented in Table 2. The R value of 0.398 suggests a moderate degree of correlation between the predictor variables and academic engagement. According to Satardien et al. (2019), the R value, or adjusted R, indicates the proportion of the total variance in academic engagement that is accounted for by the predictor variables in the model. The findings reveal that the model explains 13.3% of the variance in academic engagement.

Table 2. Model Summary.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.398[a]	.158	.133	18.98507

a. Predictors: (Constant), PW, ASE

The analysis of variance (ANOVA), tests the null hypothesis that multiple R in the population equals 0, and reports how well the regression equation fits the data (predicts the dependent variable) (Pallant, 2010). Results in Table 3 indicates that the regression model is statistically significant ($p < 0.05$).

Table 3. Analysis of Variance.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4541.306	2	2270.653	6.300	.003[b]
	Residual	24148.994	67	360.433		
	Total	28690.300	69			

a. Dependent Variable: AE

b. Predictors: (Constant), PW, ASE

The third step of the analysis sought to determine whether academic self-efficacy and psychological well-being could predict academic engagement. To assess potential multicollinearity among the predictors, tolerance and variance inflation factor (VIF) values were examined. According to Satardien et al. (2019), tolerance values below 0.10 suggest high correlations among the variables, which may indicate multicollinearity, while VIF values exceeding 10 would similarly signal multicollinearity. The results presented in Table 4 show that both the VIF and tolerance values fall within the acceptable range, suggesting that multicollinearity is not a concern in this model.

Further analysis in Table 4 reveals that psychological well-being made a statistically significant and unique contribution to academic engagement, with a standardized beta coefficient of $\beta = 1.675$, $t = 2.851$, and $p < 0.006$. This indicates that psychological well-being is a significant predictor of academic engagement. However, the results did not reveal a statistically significant predictive relationship between academic self-efficacy and academic engagement, as indicated by the standardized beta coefficient of $\beta = 0.422$, $t = 0.392$, and $p > 0.696$. This suggests that, while academic self-efficacy was correlated with academic engagement, it did not demonstrate a significant direct predictive effect in the context of this study.

These findings highlight the importance of psychological well-being as a stronger predictor of academic engagement compared to academic self-efficacy in this sample. This aligns with prior research suggesting that students' overall well-being can have a more immediate and substantial impact on their engagement in academic activities. However, the lack of a significant predictive relationship between academic self-efficacy and engagement warrants further investigation, particularly with respect to potential mediating or moderating factors that could influence this relationship.

Table 4. Regression Analysis: Academic self-efficacy, Psychological Well-being, Academic Engagement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.084	16.947		.772	.443		
	ASE	.422	1.078	.051	.392	.696	.747	1.339
	PW	1.675	.587	.370	2.851	.006	.747	1.339

a. Dependent Variable: AE

4. DISCUSSION

This study aimed to assess the relationships between academic self-efficacy, psychological well-being, and academic engagement among students at a tertiary institution in the Central Province of Zambia, utilizing a cross-sectional design. The second objective was to determine whether academic self-efficacy and psychological well-being could predict academic engagement.

Reliability estimates were calculated using Cronbach's alpha coefficients (α), and the results demonstrated a high level of internal consistency ($\alpha \geq 0.70$) for the three measuring instruments, in line with Nunnally and Bernstein's (1994) reliability standards. However, a notable limitation of the study was the very low Cronbach's alpha value of 0.565 for the general self-efficacy scale, which is acknowledged as one of the constraints in this research. This value is lower than that reported by Akanni and Oduarani (2018), who obtained a higher reliability coefficient for self-efficacy measures. Conversely, the psychological well-being scale and the university student engagement inventory both displayed strong internal consistency with Cronbach's alpha values of 0.785 and 0.804, respectively. While these coefficients are still acceptable, they are slightly lower than those reported by Diener et al. (2010) and Maroco et al. (2016), who found values of 0.87 and 0.88, respectively.

Pearson product-moment correlation coefficients were used to examine the relationships among the three key variables in this study. The first hypothesis, which posited a relationship between academic self-efficacy and psychological well-being, was confirmed. The findings revealed a positive relationship between the two variables, indicating that university students with higher levels of self-efficacy experience greater psychological well-being. This result aligns with previous studies, such as Mohtasham et al. (2024), which found a significant correlation ($P < 0.01$), and a structural equation modeling analysis by Tang and Zhu (2024), which showed a similar result ($r = 0.51$, $P < 0.01$) among 968 Chinese students learning English as a foreign language. Other studies corroborating this finding include those by Costa et al. (2013), Garcia-Alvarez (2021), Hong et al. (2022), and Matteucci and Soncini (2021), who all observed a significant relationship between academic self-efficacy and psychological well-being.

The second hypothesis, which proposed a relationship between academic self-efficacy and student academic engagement, was also confirmed. A strong positive, statistically significant relationship was found between the two variables. This suggests that students who believe in their academic capacity to successfully complete educational tasks are more likely to be engaged in their academic pursuits. This finding is consistent with prior research, including Hidiroglu (2014), Chang and Chieng (2015), and Luo et al. (2023), who similarly demonstrated that academic self-efficacy is a key predictor of academic engagement.

The third hypothesis, which proposed a relationship between psychological well-being and student academic engagement, was also confirmed. A strong positive, statistically significant relationship was found between these two variables, indicating that students' academic satisfaction, happiness, and overall well-being, which stem from their beliefs in academic competence, positively influence their academic engagement. This result aligns with the findings of Huo (2022) and Heffner and Antaramiam (2016), who observed similar associations between psychological well-being and student engagement.

In other words, this study highlights the significant role that both academic self-efficacy and psychological well-being play in predicting student academic engagement. The results reinforce existing literature, emphasizing the interconnectedness of these variables and their implications for designing interventions aimed at fostering greater student engagement, psychological well-being, and overall academic success.

5. CONTRIBUTION

Academic engagement is a crucial latent variable that significantly influences various outcomes such as academic performance, students' perceptions of institutional image, and their long-term career progression. Consequently, the study at hand is particularly relevant as it explores the factors influencing student engagement within learning institutions, with a specific focus on psychological well-being and academic self-efficacy as predictors. The findings of this research underscore the predictive value of psychological well-being in relation to academic engagement, thus providing valuable insight into how psychological well-being can forecast levels of student engagement. From a practical standpoint, the implications of these findings are noteworthy for university administrators. By integrating this understanding into policy and practice, administrators are positioned to design and implement targeted interventions and strategies that enhance student engagement, ultimately contributing to improved academic outcomes and student success.

6. LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

The study employed the General Academic Self-Efficacy Scale to measure academic self-efficacy; however, it yielded a low reliability coefficient, which calls into question the scale's effectiveness in this context. Given this limitation, future research in Zambia should consider using alternative, validated measures of academic self-efficacy, such as the scale developed by Gafoor and Ashraf (2016), to ensure more accurate and reliable results. Furthermore, the relatively small sample size of 86 participants in this study limits the generalizability and strength of the findings. A larger sample size, ideally exceeding 200 participants as recommended by most statistical software packages, would allow for more robust statistical analyses, such as Confirmatory Factor Analysis (CFA) to control for measurement errors and Structural Equation Modeling (SEM) for path analysis. As it stands, the sample size in this study falls short of the requirements for these advanced methods, and future studies should aim to increase the sample size to enhance the reliability and validity of the findings.

Additionally, the cross-sectional design of this study precludes any conclusions regarding cause-and-effect relationships, as it captures data at only a single point in time (Geldenhuys & Henn, 2017). Longitudinal studies, which track participants over an extended period, would be better suited to uncover causal inferences and provide deeper insights into the dynamics of academic engagement and its predictors. Another potential limitation stems from the use of self-administered questionnaires, which are prone to social desirability biases and may lead to underreporting of certain behaviors or attitudes, thus affecting the accuracy of responses (Satardien et al., 2019). To mitigate such biases, future studies could incorporate alternative data collection methods, such as interviews or behavioral assessments, which could provide more reliable and comprehensive data.

Finally, the cross-sectional nature of the study does not account for maturational effects, which may influence academic engagement over time. Longitudinal studies, as suggested by Terre Blanche and Durrheim (1999) and Satardien et al. (2019), would provide a more nuanced understanding of how student engagement evolves and is influenced by both psychological well-being and academic self-efficacy over time.

In summary, while this study offers valuable insights into the predictors of academic engagement, addressing the limitations related to sample size, measurement tools, study design, and data collection methods will be crucial for future research to yield more generalizable and reliable findings.

7. CONCLUSION

This study has provided valuable insights into the relationships between academic self-efficacy, psychological well-being, and student academic engagement. The findings indicate that academic self-efficacy is significantly correlated with both psychological well-being and student academic engagement. However, it is psychological well-being that explains a substantial proportion of the variance in student academic engagement. This highlights the central role of psychological well-being in influencing how engaged students are in their academic pursuits.

Understanding how these three variables interrelate is crucial for education practitioners, as it provides a framework for designing effective learning interventions and policies. By recognizing the importance of psychological well-being in fostering student engagement, university administrators and educators can develop targeted strategies that not only enhance students' academic self-efficacy but also support their overall psychological health. This holistic approach can help create a more conducive learning environment, ultimately leading to improved academic outcomes and well-being for students.

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