

Learning Independence and Family Support as Predictors of Student Academic Success in the Digital Independent Learning Era

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Article history: Received: March-20-2024 | Revised: April-19-2024 | Available

Online: April-26-2024

Abstract

The phenomenon of declining learning discipline, the tendency to depend on instant learning resources, and the gap in students' ability to manage independent learning strategies are important concerns in the university environment. These challenges are increasingly complex in the era of digital independent learning, where students are required to be able to manage time, filter digital information, and maintain motivation to learn in the midst of various technological distractions. This condition is strengthened by the fact that there is still a variety of family support that affects students' mental and academic readiness, including the support of technology facilities and the strengthening of emotional factors. This situation shows the urgency of research on internal and external factors that affect learning outcomes. This study aims to analyze the influence of learning independence and family support on student learning outcomes. The research approach used was quantitative with an explanatory design, involving 100 students through convenience sampling. The analysis includes descriptive statistics, validity tests, reliability tests, and multiple linear regressions. The results showed that learning independence and family support had a significant positive effect on learning outcomes, with learning independence as the most dominant variable. These findings emphasize the need to strengthen learning programs that encourage academic independence, digital literacy, and family collaboration to support student development in a technology-based learning environment.

Keywords: Learning Independence, Family Support, Learning Outcomes, Students, Self-Regulated Learning, Family Involvement.

Introduction

Higher education requires students to have the ability to manage the learning process independently in order to achieve academic success. The development of the world of science and the demands of the digital learning era make students active subjects who are responsible for regulating their rhythm, strategies, and learning impulses through access to extensive information and technology-based learning resources (Jamaluddin et al., 2013; Junaščíková, 2023). In this situation, the ability to select information, overcome digital distractions, and maintain learning motivation are important indicators of study success (Hariani & Mendrika, 2023). At this stage, the ability to regulate oneself in learning is not just a choice, but a necessity that forms academic resilience and long-term critical thinking capacity (Hia et al., 2018). Learning independence, as Zimmerman explains, describes the process of self-control in learning activities that includes cognitive, motivational, and behavioral aspects, so that students play a role as the main guide in their academic journey, especially when facing the challenges of online learning flexibility, *self-paced learning*, and the increasingly high demands of academic productivity in the digital environment (Lopes et al., 2019).

In addition to internal factors, the support of the immediate environment, especially the family, plays a powerful role in shaping the academic success of students. Even though students are entering the adult phase, family support is still relevant as a source of psychological motivation, direction of educational values, and facilitation of learning activities (Roksa & Kinsley, 2019). In the scope of digital learning that demands high independence, the ability of families to provide a conducive atmosphere, access to technological devices, and emotional stability are important parts that encourage students to be able to adapt to the demands of *self-paced learning*, digital platforms, and technology-based academic activities (Karina et al., 2018; Nikolaou, 2022). Epstein emphasized that the success of education does not only depend on educational institutions, but is also influenced by the synergy of families and communities that are present in the form of providing attention, guidance, and comfortable learning spaces (DeFauw et al., 2018; Djazilan & Darmawan, 2021). Therefore, family support remains an emotional and social foundation that strengthens students' readiness to learn in higher education, including to face the challenges of independent learning in a digital environment that is full of distractions and demands higher discipline.

Learning outcomes then become the main benchmark for the success of the educational process in the academic realm (Caspersen et al., 2017). Anderson and Krathwohl stated that learning outcomes are reflected through the mastery of gradual thinking skills starting from remembering, understanding, applying, analyzing, evaluating, to creating (Luu & Phan, 2020). In digital independent learning, mastery of these abilities is increasingly important because students are required to understand the material, and be able to access, select, and manage digital information effectively (Sanova et al., 2022; Jamaluddin et al., 2013). Thus, students' academic achievements are understood as final scores as well as reflecting critical thinking capacity, creativity, digital literacy, and the ability to apply knowledge in solving real problems in the technological era. Universities have a mandate to produce excellent graduates who are adaptive to the dynamics of digital learning and the demands of the knowledge-based professional world, so that research on variables that affect student learning outcomes is a strategic step to ensure the readiness of the academic generation to face global challenges.

The phenomenon of variations in student learning success seen in academic achievement shows the need for a study of the factors that shape learning outcomes. There are still students with difficulty managing study time, lack confidence in facing academic challenges, or have not made optimal use of digital learning resources. In the midst of easy access to information and learning technology, not all students are able to manage digital distractions, stay focused, and maximize online platforms as a means of improving competence (Kholid &

Darmawan, 2023). On the other hand, the role of the family is not always present in the same form between individuals, thus providing disparities in moral support, motivation, and assistance of learning facilities, including adequate technological devices and internet networks. This difference in conditions raises fundamental questions related to how much contribution learning independence and family support to student learning outcomes in a modern academic environment that demands independence, digital literacy, and the ability to self-regulate in technology-based independent learning.

Based on this background, this study aims to measure the influence of learning independence and family support on student learning outcomes. This study is important considering that academic success in the era of digital independent learning is increasingly determined by students' ability to actively manage their learning process as well as the support of the family ecosystem to provide emotional stability and support for technology-based learning facilities. This research is expected to contribute to the development of educational science, especially the understanding of internal and external elements that affect academic success at the university level related to modern learning that requires digital literacy, independent learning discipline, and student psychological resilience. In addition, the results of the research are expected to provide practical benefits for students, families, and education managers to design strategies to strengthen the culture of independent learning, constructive family assistance, and the formation of a technology-based academic environment that encourages optimal achievement.

Method

This study used an explanatory quantitative design to test the influence of learning independence (X.1) and family support (X.2) on learning outcomes (Y) in students. The unit of analysis is individual students who fill out a structured questionnaire. The respondents amounted to 100 students, obtained through *convenience sampling techniques* according to the researcher's access, on the condition that they actively participated in lectures in the current semester. The instrument is delivered based on a closed statement so that the response is consistent and the composite score is easy to calculate. All are students of Sunan Giri University Surabaya.

The operational independence of learning refers to the theory of Self-Regulated Learning Zimmerman (1989). This construct includes three dimensions: cognitive regulation, motivational regulation, and behavioral regulation. Each dimension is represented by two items so that a total of 6 items for X.1. Cognitive regulation assesses the planning, monitoring, and evaluation of learning strategies; Motivational regulation assesses internal drive, *self-efficacy*, and perseverance in facing tasks; behavioral regulation assesses timing, learning environment arrangement, and utilization of learning resources. Score X.1 using Likert 1–5 (1 = strongly disagree to 5 = strongly agree); a high score indicates a strong SRL.

Family support operations refer to Epstein's (2001) model which places the family as a partner in the educational ecosystem. Variable X.2 is composed of 6 items, each representing one dimension: *parenting, communicating, volunteering, learning at home, decision making, and collaborating with community*. The item assesses the atmosphere of the learning house, parental communication related to academic progress, direct support for academic activities, home-based learning assistance, participation in educational decision-making, and encouragement to build networks with the community. The X.2 score also uses Likert 1–5; A high score signifies strong family support.

The operation of learning outcomes follows the revision of the taxonomy of Anderson and Krathwohl (2001). Variable Y contains 6 items representing six tiered cognitive processes: remembering, understanding, *applying*, analyzing, *evaluating*, and *creating*. Items include the ability to remember concepts, explain meaning, apply theory to new cases, analyze parts and their

relationships, evaluate with logical criteria, and design original ideas or solutions. The Y score uses the range of 0–100 as a composite index of academic achievement; A high score indicates a good achievement.

Data analysis included descriptive statistics (mean, standard deviation, minimum, maximum, median, and *average confidence interval*), item validity test using Corrected Item–Total Correlation with r -table criteria = 0.195 at $N = 100$ ($df = 98$; $\alpha = 0.05$), Cronbach's Alpha reliability test ≥ 0.70 , and classical assumption test before modeling. The normality of residues was checked via histogram and P-P plot; multicollinearity was tested via $VIF < 10$ and Tolerance > 0.10 ; heteroscedasticity was examined through scatterplots or Glejser tests. Hypothesis testing using multiple linear regression: . Reporting includes ANOVA (F and $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$ -value), non-standard coefficients (B) and standard (Beta), partial t-test, R , R^2 , Adjusted R^2 , and *standard error of estimate*. Ethical procedures include conscious consent, confidentiality of identity, and the use of data solely for scientific purposes.

Results And Discussion

1. Research Results

Twelve study informants had an age range of 28 to 47 years, with the majority aged 30–36 reflecting on the productive life phase of early childhood parents. In terms of education, seven people have S2/S3 education and four S1 education, and one person has a high school education. Profiles that reflect the diversity of academic literacy levels. Professional backgrounds are very diverse: civil servants, teachers, lecturers, civil servants, private/freelance, to *security*. This diversity provides a wealth of perspective that is important because the experience of educating a child's religion is significantly influenced by the context of each father's work and time availability. The number of informant children ranged from one to five children, with the age of majority being in the range of 1–8 years.

Before the inferential analysis was carried out, the first step of this study was to present an overview of respondent data through descriptive statistical analysis. This analysis aims to provide a comprehensive understanding of the tendency of respondents' answers to each statement item in the research instrument which includes the variables of learning independence (X.1), family support (X.2), and learning outcomes (Y).

The variables of learning independence and family support were measured using a Likert scale with a score range of 1 to 5, where higher values describe a better level of learning independence and family support. Meanwhile, the learning outcome variables were measured using a score range of 0 to 100 as a representation of the respondents' academic achievements.

Descriptive analysis was carried out to obtain information about the minimum, maximum, average, and standard deviation values in each statement item and overall in each variable. The results of this analysis are expected to provide an initial overview of the characteristics of the data, the tendency of student responses, and the distribution of scores on the three research variables so that it can support the interpretation of the results of advanced statistical tests.

Table 1. Descriptive Statistics of All Research Variable Items

<i>Variable</i>	<i>Item</i>	<i>Dimensions</i>	<i>Red</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Categories</i>
<i>Learning Independence (X.1)</i>	X1.1	Cognitive regulation	3.86	0.67	2	5	Height
	X1.2	Cognitive regulation	3.90	0.64	2	5	Height
	X1.3	Motivational regulation	3.79	0.70	2	5	Height

<i>Variable average X.1</i>	X1.4	Motivational regulation	3.74	0.72	2	5	Height	
	X1.5	Behavioral regulation	3.83	0.68	2	5	Height	
	X1.6	Behavioral regulation	3.78	0.69	2	5	Height	
	<i>Variable average X.1</i>		3.82	0.56	2.30	4.90	Height	
	<i>Family Support (X.2)</i>	X2.1	Parenting	3.72	0.73	2	5	Height
		X2.2	Communicating	3.61	0.79	2	5	Medium–High
		X2.3	Volunteering	3.45	0.84	2	5	Medium
		X2.4	Learning at home	3.66	0.77	2	5	Height
		X2.5	Decision-making	3.52	0.80	2	5	Medium–High
X2.6		Collaboration w/ community	3.55	0.82	2	5	Medium–High	
<i>Average variable X.2</i>		3.58	0.62	2.00	4.90	Medium–High		
<i>Learning Outcomes (Y)</i>	Y1	Remembering	80.4	8.3	60	95	Good	
	Y2	Understanding	79.6	8.0	60	95	Good	
	Y3	Applying	78.8	8.2	60	95	Good	
	Y4	Analyzing	77.9	7.5	60	95	Good	
	Y5	Evaluating	77.3	7.6	60	94	Good	
	Y6	Creating	78.2	7.9	60	95	Good	
	<i>Variable average Y</i>		78.9	7.2	61	95	Good	

Based on the results of a descriptive analysis of 100 students, it is known that the learning independence variable shows an average score of 3.82 on a scale of 1–5, which indicates the level of learning independence in the high category. The sub-dimension of cognitive regulation obtained the highest scores compared to other dimensions. This indicates that students tend to be strong in planning and monitoring their learning activities.

The family support variable had an average value of 3.58, which was in the medium-high category. The *parenting* dimension shows the highest support, indicating that the family provides a home atmosphere conducive to learning. The lowest item is found in the *volunteering aspect*, in line with the character of students who are more independent so that the direct participation of families in academic activities is relatively minimal.

The average value of the learning outcome variable of 78.9 on a scale of 0–100 shows that the academic achievement of students is relatively good. The dimensions of *remembering* and *understanding* had the highest scores, while *evaluating* was slightly lower. This shows that the basic to intermediate level of thinking has been well mastered, and the students' high-level thinking skills are good but still have room for further development.

A validity test is carried out to ensure that each item of the statement is able to measure the variable in question. The technique used is *Corrected Item–Total Correlation*. With a total of 100 respondents, the r-table value at the significance level of 5% is **0.195**. An item is said to be valid if the correlation value is greater than the r-table.

The calculation results showed that all statement items for the variables of learning independence, family support, and learning outcomes had a *Corrected Item–Total Correlation* value greater than 0.195. Thus, all items in the three variables are declared **valid** and can be used at the next stage of analysis.

Table 2. Results of the Validity Test of Learning Independence Variables (X.1)

<i>Item</i>	<i>Corrected Item–Total Correlation</i>	<i>r– table</i>	<i>Remarks</i>
X1.1	0.542	0.195	Valid
X1.2	0.611	0.195	Valid
X1.3	0.657	0.195	Valid
X1.4	0.489	0.195	Valid
X1.5	0.523	0.195	Valid
X1.6	0.574	0.195	Valid

The learning independence variables in this study were measured using six statements prepared based on the theory of *self-regulated learning*, which includes aspects of cognitive regulation, motivational regulation, and behavioral regulation. The first two items measure students' ability to plan, monitor, and evaluate the learning process (cognitive regulation). The next two items describe the ability of students to maintain motivation and confidence in their ability to achieve optimal learning outcomes (motivational regulation). The last two items measure students' ability to manage time, choose the right learning environment, and utilize learning resources effectively (behavioral regulation). Based on the results of the validity test, all statements have a *Corrected Item–Total Correlation* value greater than *r-table* 0.195, so that all indicators are declared valid and suitable to be used to measure the level of student learning independence.

Table 3. Results of the Family Support Variable Validity Test (X.2)

<i>Item</i>	<i>Corrected Item–Total Correlation</i>	<i>r– table</i>	<i>Remarks</i>
X2.1	0.475	0.195	Valid
X2.2	0.534	0.195	Valid
X2.3	0.612	0.195	Valid
X2.4	0.498	0.195	Valid
X2.5	0.457	0.195	Valid
X2.6	0.521	0.195	Valid

The family support variable was measured through six statement items compiled based on Epstein's (2001) family support model, which included six key aspects of family involvement in education. The first item describes family support to provide a conducive home environment for learning (parenting). The second item is related to family communication regarding student academic development (communicating). The third point reflects the family's direct support for student educational activities (volunteering). The fourth point measures the extent to which families provide motivation and attention to the learning process of students at home. The fifth point describes family involvement in decision-making related to student education (decision making). The last item measures how families encourage students to be involved in academic or community activities that support self-development (collaborating with community). The results of the validity test showed that all items had a *corrected item–total correlation* value above *r-table* 0.195, so that all indicators were declared valid and suitable for use in the study.

Table 4. Validity Test Results of Learning Outcome Variables (Y)

<i>Item</i>	<i>Corrected Item–Total Correlation</i>	<i>r–table</i>	<i>Remarks</i>
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Y1	0.521	0.195	Valid
Y2	0.604	0.195	Valid
Y3	0.673	0.195	Valid
Y4	0.486	0.195	Valid
Y5	0.558	0.195	Valid
Y6	0.595	0.195	Valid

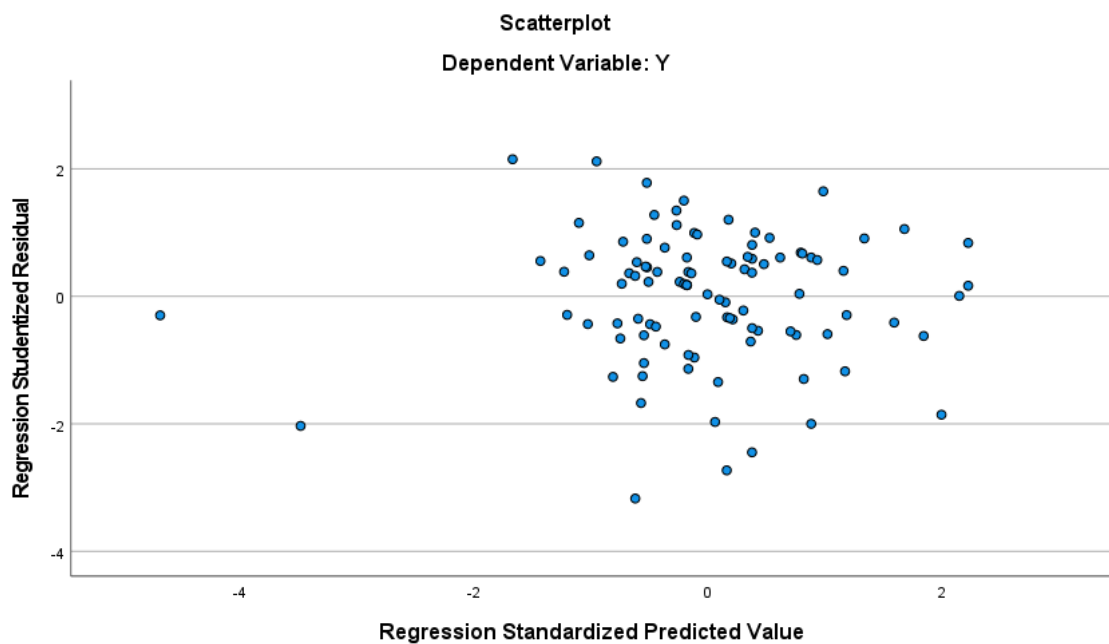
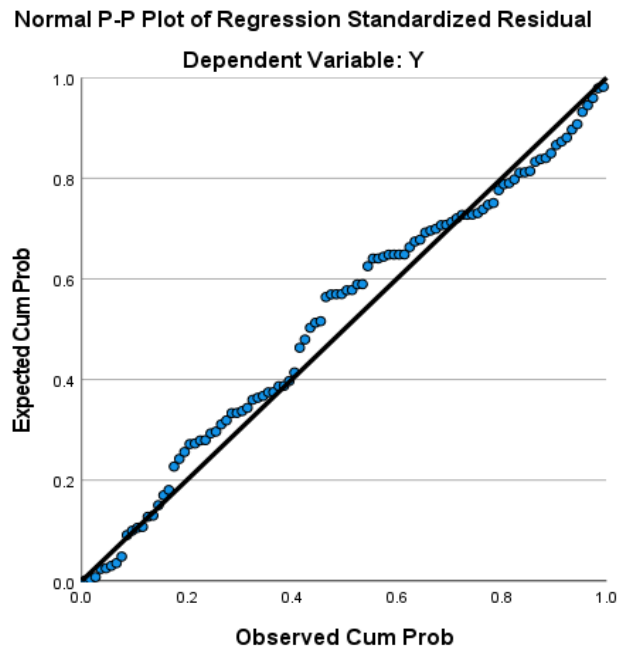
The learning outcome variables were measured using six statements developed based on the revised taxonomy of Anderson and Krathwohl (2001). Each statement item represents one dimension of thinking ability from the basic level to the high level, namely remembering, understanding, applying, analyzing, evaluating, and creating. The first item describes the ability of students to remember and rerecognize the material that has been studied. The second item measures the ability of students to understand and reinterpret the information received in a more meaningful form. The third point is related to the ability to apply concepts in new situations. The fourth item measures information analysis skills. The fifth point describes the ability to evaluate information with logical and systematic criteria. The last item assesses the ability of students to create new academic ideas or products based on the material that has been studied. All items have a *Corrected Item–Total Correlation* value greater than *r*-table 0.195, so they are declared valid and suitable for use as a research instrument.

The reliability test was conducted using Cronbach's Alpha to see the consistency of respondents' answers to question items. An instrument is said to be reliable if Cronbach's Alpha is greater than 0.70. Based on the test results, all variables had a Cronbach's Alpha value above the minimum limit so that the instrument was declared reliable. Thus, all research instruments have met the requirements for validity and reliability, making them suitable for further statistical analysis.

Table 5. Reliability Test Results

<i>Variable</i>	<i>Cronbach's Alpha</i>	<i>Criteria</i>	<i>Remarks</i>
<i>Learning Independence (X.1)</i>	0.812	> 0.70	Reliable
<i>Family Support (X.2)</i>	0.784	> 0.70	Reliable
<i>Learning Outcomes (Y)</i>	0.825	> 0.70	Reliable

Before conducting regression analysis, classical assumption testing is carried out to ensure that the regression model built qualifies as a good model and is worthy of further testing. The normality test was carried out through a graphical approach, i.e., the P–P plot shows the dots spread along a diagonal line, indicating a normal residue distribution pattern. This condition indicates that the residual model does not experience deviations from the assumption of normality, so the regression is feasible to continue.



The multicollinearity test was carried out to ensure that there was no high correlation between independent variables. The Tolerance value is above 0.10 which is 0.898 and the Variance Inflation Factor (VIF) value is below 10 which is 1.114 for each variable. This shows that there is no problem of multicollinearity in the model, so each independent variable has a unique contribution to explaining student learning outcomes.

Durbin Watson's value is 1.756. With a value of 1.756, it means that the model does not show any serious autocorrelation problems, or it can be said that the autocorrelation is very weak and still within reasonable limits. The regression model can be considered stable in this regard.

The heteroscedasticity test was carried out using a scatterplot between the residual and the predicted value. The pattern of point distribution looks random without showing a

specific pattern, either conical or widening. This indicates that there are no symptoms of heteroscedasticity in the regression model. The model can be said to be stable and consistent for predicting bound variables at different levels of free variable values.

With the fulfillment of classical assumptions, multiple regression analysis can be performed validly because the model does not experience any assumption violations that can undermine the validity of the estimates. Multiple linear regression analysis was used to determine the contribution of the variables of learning independence (X.1) and family support (X.2) to student learning outcomes (Y). Based on the results of data processing through the SPSS program, a correlation coefficient value (R) of 0.635 was obtained. This value shows that there is a strong relationship between the two independent variables together with the dependent variables. The strength of these relationships is relatively high, so it can be concluded that the changes that occur in learning independence and family support have a real relationship with changes in student learning outcomes.

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635	.403	.390	4.641

a. Predictors: (Constant), X.2, X.1

The value of the determination coefficient (R Square) of 0.403 indicates that 40.3% of the variation in student learning outcomes can be explained by the variables of learning independence and family support. The rest, which is 59.7%, is influenced by other variables outside this research model, such as psychological factors, learning environment, internal motivation, lecturer learning methods, and social support that are not measured in this study. The Adjusted R Square value of 0.390 also reinforces that the model obtained is stable and relevant enough to explain the influence of two independent variables on learning outcomes, although there is an adjustment to the sample size.

Table 7. CHANGE^{TO}

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	408.397	2	204.198	32.700	.000b
Residual	588.913	7	84.130		
Total	997.310	9			

a. Dependent Variable: Y
b. Predictors: (Constant), X.2, X.1

The results of the ANOVA test showed an F value of 32,700 with a significance level of 0.000. Significance values below 0.05 confirm that the constructed regression model is simultaneously significant. This means that learning independence and family support together have a real influence on student learning outcomes. Thus, a hypothesis that states that there is a simultaneous influence between the two independent variables on learning outcomes is acceptable.

Table 8. Coefficients^a

Models	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	.333	.806		1	.164
1 X.	.334	.050	.55	6.704	.000
2 X.	.144	.067	.17	2.142	.035

a. Dependent Variable: Y

Furthermore, the partial regression coefficient test confirms the contribution of each independent variable. The variable of learning independence has a regression coefficient value of 0.334 with a t-value of 6.704 and a significance level of 0.000, which means that learning independence has a significant positive effect on student learning outcomes. In other words, the higher the level of student learning independence, the higher the level of achievement of learning outcomes obtained. These findings underline that students' ability to manage their study time, take the initiative to find material, and be responsible for their academic process is a determining factor for their academic success.

The family support variable also made a significant positive contribution to learning outcomes with a regression coefficient value of 0.144, a t-value of 2.142, and a significance of 0.035. This shows that the greater the support provided by the family, both in the form of moral support, attention, the provision of learning facilities, and conducive home conditions, the higher the likelihood of students obtaining good academic results. However, the magnitude of the influence of family support is not as strong as the influence of learning independence, which can be seen from the smaller value of the regression coefficient.

Meanwhile, a constant value of 5,333 indicates that if the value of learning independence and family support is considered constant or zero, then the value of student learning outcomes is at 5,333. The regression equation obtained from this study is $Y = 5.333 + 0.334X.1 + 0.144X.2$. The equation indicates that every one unit increase in the score on learning independence will increase learning outcomes by 0.334 units, and every one unit increase in the score on family support will increase learning outcomes by 0.144 units.

Overall, the results of this study confirm that the research instruments have been proven to be valid and reliable, and show that both learning independence and family support have an important role in improving student learning outcomes. However, learning independence has been proven to have a more dominant influence than family support. The model developed is able to explain 40.3% of the variation in student learning outcomes, so it can be stated that this study provides a meaningful picture of the factors that affect students' academic success, especially in the scope of higher education. These findings also provide implicit recommendations that the development of learning independence is an important strategy to improve student learning outcomes, while still taking into account family support as a relevant external factor.

The results of the study show that learning independence has a significant and most dominant influence on student learning outcomes. This finding is in line with Zimmerman's

view that students who are able to manage their learning process independently will have a greater chance of achieving optimal academic results. In a digital self-learning environment, this ability is increasingly important because students are required to manage time, maintain focus, and utilize online learning resources effectively in the midst of information flows and potential technological distractions (Karina et al., 2018; Kashif & Shahid, 2021). The value of a positive regression coefficient on learning independence indicates that any improvement in students' ability in learning planning, motivation control, and learning behavior management will increase their academic achievement. Practically, students who are able to manage their study schedules consistently, have the initiative to overcome material difficulties, and apply active learning strategies on digital platforms and online knowledge sources, tend to show higher academic scores than students who still rely on external encouragement or direct guidance (Al Hakim et al., 2014; Tülübaş, 2022).

Family support has also been shown to have a significant positive influence on learning outcomes even though the contribution is smaller than learning independence. These findings confirm Epstein's concept of emphasizing the importance of family involvement in education, both through moral support, motivational reinforcement, and the provision of learning facilities. In the scope of digital independent learning, family support is becoming increasingly relevant because students need emotional stability, psychological encouragement, and support for access to technology and a distraction-free learning environment (Darmawan, 2012; Marlina et al., 2023). The presence of a caring family, a comfortable learning space, and positive communication about academic development encourage students to stay enthusiastic and focused on completing their assignments, including those based on digital platforms and *self-paced learning* (Emita & Lukas, 2022). Although students are in the phase towards full independence, the results of the study show that the role of family remains important as an emotional foundation that supports learning motivation, mental balance, and consistency to manage academic activities in the era of technology-based learning (Gao et al., 2021).

Conceptually, the combination of internal potential in the form of self-regulation skills and external support in the form of family involvement forms a comprehensive learning ecosystem. Students who have a mature learning strategy and a supportive home environment will be better prepared to face the academic demands of college (Djazilan & Darmawan, 2022; Xu et al., 2022). In the era of digital independent learning, this synergy has become increasingly important because students face the challenge of managing technological distractions, planning learning activities independently, and utilizing very diverse digital learning resources (Solomon, 2022; Kurniawan et al., 2022). This reinforces the view that successful learning is not only about the ability to digest material, but also the ability to self-regulate, maintain focus on learning in the digital space, and have an effective social support network (Al Hakim et al., 2014; Jang & Park, 2023). In addition, the pattern of findings suggests that higher education requires an effective approach that integrates strengthening digital literacy, learning independence, and family support, but internal student factors remain the main drivers of academic success at the university level (Erlinawati et al., 2016).

From the perspective of student development, the results of the study provide an idea that the independent learning stage is an important phase in higher education. Students who develop high-level thinking skills, analytical skills, and independent learning initiatives will be better prepared to face the dynamics of work and the demands of *lifelong learning*. In the era of digital independent learning, this ability is increasingly strategic because students are required to be able to utilize learning technology, manage digital information critically, and maintain learning consistency without direct supervision (Al Mursyidi & Darmawan,

2023; Karina et al., 2018; Kurniawan et al., 2022). Family support that is present in the form of emotional attention and relevant facilities continues to have a positive impact, including support for the use of technology devices and adequate internet access (Djazilan & Darmawan, 2021). However, the role of students as the main controller of the learning process remains a crucial factor to achieve the best achievements, especially when the learning system directs them to be more independent, flexible, and adaptive to digital-based academic demands.

The findings of this study have implications for the world of higher education. Universities need to strengthen learning programs that encourage independent learning, such as the use of *project-based learning methods*, *self-reflection assignments*, problem-based learning, and the use of structured independent learning digital platforms. In addition, it is necessary to develop more responsive academic support through learning counseling services and digital literacy assistance to help students plan effective learning strategies in a technology-based learning environment. The implications for families are to maintain emotional support functions, provide learning facilities including access to digital devices and the internet, and positive communication about children's educational development. For students, these findings are an encouragement to improve learning discipline, develop self-regulation skills in the digital space, and strengthen internal motivation to be able to achieve maximum academic results and be competitive in the era of digital independent learning.

Conclusion

The results of the study show that learning independence and family support have a positive and significant effect on student learning outcomes. Learning independence emerged as the most dominant factor. The higher the student's ability to manage time, motivate themselves, and manage the learning process, the higher the academic achievement achieved. Family support also makes a real contribution even though it is in a lower level of influence than learning independence. Parental attention, a supportive home atmosphere, and moral encouragement are one of the foundations that support student success. Overall, this research model was able to explain 40.3% of the variation in student learning outcomes. The findings provide an idea that students' academic success is the result of a combination of personal ability to manage the learning process and the sustainability of family environmental support.

The findings of this study provide a strong picture of the importance of developing learning independence for students as one of the main determinants of academic success. In the scope of digital independent learning, students' ability to plan, manage, and evaluate their own learning process is increasingly an urgent need, considering that many lecture materials are now delivered through digital platforms and online learning resources that require high self-control. The practical implication of these results is that higher education institutions need to design learning strategies that encourage students to become independent learners with qualified digital literacy. Project-based learning models, collaborative learning through technology, and *student-centered learning approaches* can be a medium for fostering academic responsibility, consistency of independent learning, and the ability to effectively navigate various online knowledge resources. Thus, students will be skilled in understanding the material, and ready to face the dynamics of learning and the increasingly digital world of work.

In addition, although the influence of family support was below the variable of learning independence, its contribution remained significant. Therefore, educational institutions can also provide a space for communication with families through activities such as parent seminars, academic meetings, and regular student development delivery. The purpose of this effort is to strengthen family participation in the educational process, so as to create synergy between the home environment and the campus environment to support student academic development.

From the student's point of view, the results of this study hint at the importance of personal discipline, perseverance, and the ability to manage time and learning resources. Meanwhile, for families, these findings are a reminder that attention, emotional support, and a conducive home atmosphere remain the foundation of children's success in the academic world, even though they have entered the higher education stage.

As a suggestion, for students, it is important to continue to improve their independent learning skills, discipline, time management, and willingness to explore learning resources outside the classroom. For families or parents, providing emotional support, motivation, and learning facilities is still necessary even if students have stepped on higher education. For universities, it is necessary to continue to strengthen the active learning approach, provide adequate academic assistance, and provide *study skills training* to encourage student independence. For the next researcher, it is recommended to expand the variables, increase the number of respondents, and use a mixed approach so that the picture of the influence of internal and external factors on student learning outcomes can be more comprehensive.

This research has several limitations that need to be considered for further research development. First, the study only focused on two independent variables, namely learning independence and family support, so that there are still other variables that have the potential to affect student learning outcomes, such as intrinsic motivation, lecturer learning methods, academic adaptability, campus learning environment, and student psychological condition.

Second, this study uses a quantitative approach with questionnaires as the main instrument, so that it does not capture the qualitative dimension of student learning independence patterns or specific forms of family support. The *mixed method* approach in the next study will provide a more comprehensive explanation of these dynamics.

Third, the research population is limited to 100 students in one particular education category. The generalization of the results of the research still requires testing on a wider and more varied group of respondents, both in terms of educational institutions, educational levels, and social and economic characteristics.

Bibliography

- Al Hakim, Y. R., Hariani, M., Darmawan, D., & Mardikaningsih, R. (2014). Pembelajaran Mahasiswa Melalui Media Jejaring Sosial. *Jurnal Ilmiah Manajemen dan Pendidikan Indonesia*, 1(2), 109-124.
- Al Mursyidi, B. M., & Darmawan, D. (2023). The Influence of Academic Success of Islamic Religious Education and Social Media Involvement on Student Morality. *Al-Fikri: Jurnal Ilmiah*, 17(2), 321–331.
- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
- Caspersen, J., Smeby, J.-C., & Aamodt, P. O. (2017). Measuring learning outcomes. *European Journal of Education*. <https://doi.org/10.1111/EJED.12205>
- Darmawan, D. (2012). Biological Communication Behavior through Information Technology Implementation in Learning Accelerated. *International Journal Communication, Network, and System Sciences*, 5(5), 454-462.
- DeFauw, C., Levering, K., Msipa, R. T., & Abraham, S. (2018). *Families' Support and Influence on College Students' Educational Performance*. <https://doi.org/10.20849/JED.V2I1.312>
- Djazilan, M. S., & Darmawan, D. (2022). The Influence of Parenting Style and School Culture on the Character of Student Discipline. *Studi Ilmu Sosial Indonesia*, 1(2), 53-64.
- Emita, C., & Lukas, S. (2022). The Effect of Learning Independence, Self-Regulation, and Social Support on Learning Achievement among Psychology Department Students X University in Covid-19 Pandemic Era. *Jurnal Teknologi Pendidikan*. <https://doi.org/10.21009/jtp.v24i3.28814>
- Epstein, J. L. (2001). *School, Family, and Community Partnerships: Preparing Educators and Improving Schools*. Westview Press.
- Erlinawati, N. A., Suherman, U., & Darmawan, D. (2016). Media Pembelajaran Mobile learning untuk Meningkatkan Motivasi dan Kemampuan Praktikum Mahasiswa Stikes Karsa Husada Garut. *PEDAGOGIA*, 14(2).
- Gao, H., Ou, Y., Zhang, Z., Ni, M., Zhou, X., & Liao, L. (2021). The Relationship Between Family Support and e-Learning Engagement in College Students: The Mediating Role of e-Learning Normative Consciousness and Behaviors and Self-Efficacy. *Frontiers in Psychology*. <https://doi.org/10.3389/FPSYG.2021.573779>
- Hariani, M., & Mendrika, V. (2023). Online Learning Dynamics and Lecturers' Competence in Technology. *International Journal of Service Science, Management, Engineering, and Technology*, 3(3), 39–42.
- Hia, G. R., Wedyaswari, M., & Saragih, S. A. (2018). *Self-Regulated Learning for New Tertiary Students in the Bachelor of Psychology Degree Course*. <https://doi.org/10.24123/AIPJ.V34I1.2024>
- Jamaluddin, A., Hoe, L. C., Mohamed, A. A., Darmawan, D., Hannan, A. T., Ismail, M., & Ahmad, N. (2013). Human Resource Management Implications of Technology-Based Organizational Forms. *Academy of Management Journal*, 23(2), 83-94.
- Jang, H. I., & Park, J. H. (2023). *The Effect of Self-Regulated Learning Behavior on Online Academic Procrastination and the Moderating Role of Parental Academic Involvement Latent Profiles Among Middle School Students*. <https://doi.org/10.5723/kjcs.2023.44.3.225>
- Junaštková, J. (2023). Self-Regulation of Learning in the Context of Modern Technology: A Review of Empirical Studies. *Interactive Technology and Smart Education*. <https://doi.org/10.1108/itse-02-2023-0030>
- Karina, A., Davitri, E., & Darmawan, D. (2018). Kedisiplinan dan Kemandirian Siswa Dalam Proses Pembelajaran dan Pengembangan Diri. *Jurnal Ilmiah Manajemen Pendidikan Indonesia*, 5(2), 107-120.
- Kashif, M. F., & Shahid, R. (2021). *Students' Self-Regulation in Online Learning and its Effect on their Academic Achievement*. [https://doi.org/10.31703/GESR.2021\(VI-III\).02](https://doi.org/10.31703/GESR.2021(VI-III).02)
- Kholid, K., & Darmawan, D. (2023). The Influence of Digital Literacy and Learning Media Utilization on Student Learning Motivation. *Fitrah: Journal of Islamic Education*, 4(2), 393–403.
- Kurniawan, Y., Lee, A. S., Khayru, R. K., & Hariani, M. (2022). Social Media, Impact on Student Learning Behavior. *Bulletin of Science, Technology and Society*, 1(1), 15-21.

- Lopes, R. P., Mesquita, C., Gois, L. A. de, & Junior, G. dos S. (2019, July 1). *Students' learning autonomy: a systematic literature review*. <https://doi.org/10.21125/EDULEARN.2019.1435>
- Luu, L. K., & Phan, L. (2020). *The process of evaluating students based on university program learning outcomes*. <https://doi.org/10.52296/VJE.2020.86>
- Marlina, Y., Sulaeman, M., Sutrisna, A., Siregar, M. H., & Azka, A. (2023). *Parental Support for Independent Learning and Student Learning Motivation in The Post Pandemic Era*. <https://doi.org/10.29062/edu.v6i4.724>
- Nikolaou, E. (2022). The role of family environment in distance learning. *European Journal of Education Studies*. <https://doi.org/10.46827/ejes.v9i8.4437>
- Roksa, J., & Kinsley, P. (2019). The Role of Family Support in Facilitating Academic Success of Low-Income Students. *Research in Higher Education*. <https://doi.org/10.1007/S11162-018-9517-Z>
- Sanova, A., Bakar, A. Y. A., Afrida, A., Kurniawan, D. A., & Aldila, F. (2022). Digital Literacy on the Use of E-Module Towards Students' Self-Directed Learning on Learning Process and Outcomes Evaluation Courses. *Jurnal Pendidikan Indonesia*. <https://doi.org/10.23887/jpi-undiksha.v11i1.36509>
- Solomon, R. (2022). The Impact of Self-Regulated Learning on Academic Performance in High School Students. *Journal of Student Research*. <https://doi.org/10.47611/jsrshs.v11i4.3471>
- Tülübaş, T. (2022). The Effect of Self-regulated Online Learning Skills on Academic Achievement. *Anadolu Journal of Educational Sciences International*. <https://doi.org/10.18039/ajesi.1021613>
- Xu, L., Ma, L., & Duan, P. (2022). Relationship Between Perceived Parental Academic Expectations and Students' Self-Regulated Learning Ability: A Cross-Sectional Study. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2022.786298>
- Zimmerman, B. J. (1989). A Social Cognitive View of Self-Regulated Academic Learning. *Journal of Educational Psychology*, 81(3), 329–339. <https://doi.org/10.1037/0022-0663.81.3.329>