



Student Learning Independence : Antecedents and Consequences

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ABSTRACT

This study aims to examine and analyze the antecedents and consequences of student learning independence after the Covid-19 pandemic in economics subjects. The antecedents of independent learning in this study are self-efficacy, motivation to learn, and the environment while the consequences of independent learning in this study are learning achievement and critical thinking skills. This research is a quantitative research with path analysis data analysis techniques. The research results show that; 1) Self-efficacy, learning motivation and environment have a positive and significant effect on learning independence. 2) Self-efficacy has a direct, significant positive effect on learning achievement and critical thinking skills, while learning motivation directly has a non-significant negative effect on learning achievement, but a significant positive effect on critical thinking skills and the environment has a direct, insignificant negative effect on learning achievement and thinking ability critical. 3) Learning independence has a positive and significant effect on learning achievement and critical thinking skills. 4) Self-efficacy, learning motivation and environment indirectly have a significant effect on learning achievement and critical thinking skills through independent learning

INTRODUCTION

Learning independence is a crucial aspect of the learning process because it instills in students the responsibility to manage and discipline themselves. Additionally, it fosters the development of their capacity to self-initiate and engage in learning autonomously. According to (Kristiawan, 2015) Independent learning is when an individual, typically a student, possesses the capability to translate their personal intentions and desires into concrete actions without relying on external assistance. In this context, students have the capacity to manage their own educational journey, identify effective learning strategies, and engage in learning activities autonomously.

Independence holds significant importance in the realm of learning activities because it is a fundamental personal trait essential for every individual. Independent learners are inclined to experience more effective learning outcomes as they possess the ability to self-monitor, self-evaluate, and efficiently manage their learning processes. This self-sufficiency enables them to save time effectively and grants them the capacity to direct and regulate their own thought processes and actions, fostering a sense of self-reliance rather than dependency on others (Suba, 2018).

Student learning independence is crucial for all subjects, including economics. The vast scope of economics and the constraints of time necessitate a focus on competency standards and fundamental skills related to empirical economic phenomena in the local environment, aimed at improving the quality of life (Kemdikbud, 2014: 18) in Valentina et al.'s work from, (2019).

The COVID-19 pandemic has had a noticeable impact on student learning independence, with low levels still prevalent among elementary, junior high, and high school students, namely students still do not have the value of independence in learning because students depend on cellphones, are rigid in discussions, and this can be seen from the problems that occur including that there are still students who are unsure of their own abilities, do not doing assignments or submitting assignments on time, there are still students who cheat during tests, pay less attention to the teacher when teaching and learning activities take place such as daydreaming and chatting with friends. So, students have not implemented routine, effective, and regular learning strategies.

Independent learning not only can be influenced but is able to give influence. Self efficacy, learning motivation and environment affect learning independence and learning independence influences learning achievement and critical thinking skills. There are differences in research findings regarding the effect of self-efficacy, environment and learning independence on learning achievement. According to (Utari, 2018) Self-Efficacy has an effect on student achievement, whereas according to (Rafiola et all, 2020) Self-Efficacy has no significant effect on student achievement. According to (Restiana, 2015) there is a significant positive effect of the environment on student learning achievement, whereas according to (Muslih, 2016) the environment has no effect on student achievement at the 5% error level. According to (Aini & Taman, 2012), (Nuryani & Sawiji, 2013), (Hidayat, 2019) there is a significant positive effect of independent learning on student achievement, whereas according to Matsani & Mohamad Arief, (2021) there is no significant effect between independent learning on learning achievement.

Based on the findings of previous studies, it gave inconsistent results which is a research gap that can be used to re-examine the relationship between the variables studied. And the reason for raising learning independence as an intervening variable. This study aims to determine the causality of student learning independence, so researchers are interested in further researching "Student Learning Independence: Antecedents and Consequences". The antecedents of Learning Independence in this study are self-efficacy, learning motivation, and the environment. While the consequences of independent learning in this study are learning achievement and critical thinking skills.

LITERATURE REVIEW

In this study the theory that will be used in analyzing the object of research is the Behaviorism Theory and Bandura's Social Cognitive Theory.

The theory of behaviorism emphasizes environmental influences, emphasizes parts, prioritizes the role of reactions, learning outcomes are formed mechanically, are influenced by past experiences, emphasize habit formation and solve problems by trial and error. Wina Sanjaya in (Palangda', 2017).

Bandura's Social Cognitive Theory develops from behavioral theory but focuses more on cognitive aspects (Scunk, 2000). Bandura's Social Cognitive Theory, often referred to as Social Learning Theory, posits that both social and cognitive factors, in addition to behavioral factors, exert significant influence on the learning process. Cognitive factors encompass elements such as students' self-efficacy and expectations for success. Social factors, on the other hand, involve aspects like observing and learning from the behaviors and actions of others, including parents, peers, and role models. This theory underscores the interplay between cognitive processes, social interactions, and behaviors in shaping an individual's learning experiences and outcomes (Santrock, 2004).

1. Learning independence

Learning independence is an attitude that shows an individual's ability to learn, be responsible, organize and carry out tasks with discipline. Independent learning does not mean learning alone but learning by getting a minimum of help as needed. According to Sugandi, (2013), independent learning is characterized by an attitude that involves taking the initiative in learning, diagnosing one's learning needs, establishing learning objectives, monitoring progress, and effectively managing and controlling the learning process.

2. Self Efficacy

Self-efficacy, according to Bandura (1997, 2000) as cited in Santrock, (2004), refers to an individual's belief in their capability to effectively plan, execute tasks, and successfully accomplish specific objectives or goals. It is the belief that one can navigate a situation competently and generate favorable outcomes, and it holds a substantial influence over an individual's behavior and actions. In essence, self-efficacy plays a pivotal role in shaping how people approach challenges, tasks, and ultimately, their behavioral responses in various situations

3. Learning Motivation

As per Sardiman, perspective in (2007), learning motivation encompasses the internal and external forces that propel students toward engaging in learning activities, ensuring the persistence of these activities, and providing a sense of purpose to them. Learning motivation, in essence, can be summarized as the

presence of inner or external incentives that drive individuals to participate in learning activities with the aim of achieving their desired learning objectives.

4. Environment

The environment is a learning resource that has a lot of influence on the learning process and child development. According to (Slameto, 2010) the environment is divided into family, school, community environments and all of them can influence students in learning. Hasbullah (2009) contends that the family environment serves as the primary educational setting, as it is within the family that children initially receive their education and guidance. This perspective highlights the critical role families play in shaping a child's early learning experiences, values, and behaviors. The family environment serves as the foundation upon which a child's educational journey begins, providing the first and most formative lessons in life.

According to (Dalyono, 2012) states that schools play a very important role in improving the mindset of children, because at school they can learn various kinds of knowledge. And Society can be defined as a collective of individuals who are relatively autonomous, coexist over an extended period, reside within a specific geographical region, share a common culture or set of values, and engage in the majority of their activities within group contexts. In essence, society encompasses a group of people who interact, collaborate, and organize their lives within a shared social framework, which includes cultural, economic, political, and social dimensions.

5. Learning Achievement

Learning achievement is all the behavior that students have as a result of the learning process they take, including all the consequences of the learning process that takes place at school or outside of school that are cognitive, affective, and psychomotor either intentionally or unintentionally (Syaodih Sukmadinata, 2009). Learning achievement refers to the evaluation of the outcomes or results of learning activities. These outcomes are typically represented through symbols such as numbers, letters, or sentences, which serve as indicators or measures of the level of knowledge or skill that a student has acquired during a specific period of instruction. These assessments are used to gauge a student's progress and performance in relation to the learning objectives or goals set for a particular educational period.

Learning achievement is influenced by various factors, including those categorized as internal factors. These factors originate from within the student and include psychological aspects and characteristics. Internal factors include elements such as cognitive ability, motivation, self-efficacy, previous knowledge, and personal attitudes towards learning, external factors are external to each student and can be broadly classified into two types, namely social environmental factors and non-environmental factors. -social, and learning approach factors refer to the strategies, methods and approaches that students use in the learning process. as stated by Syah, (2008).

According to (Anwar et al., 2022) there are three aspects of learning achievement, namely cognitive, affective and psychomotor.

6. Critical Thinking Skills

According to Ambarwati et al., (2021), the ability to think critically is an attribute held by an individual during the thinking process, wherein they engage in thoughtful analysis and consideration of multiple sources to make decisions in a prudent and mature fashion. Critical thinking involves a deliberate and systematic approach to evaluating information and arriving at well-informed conclusions.

General frameworks for critical thinking often include the following six key indicators (Khairani et al., 2020), namely 1) Identifying problems, 2) Gathering relevant information, 3) Developing alternative solutions to problems, 4) Making conclusions 5) Expressing opinions and 6) Evaluating arguments.

METHODOLOGY

The research methodology employed is quantitative in nature. In terms of its explanatory level, this study falls under the category of associative research, aiming to establish the impact or correlation among two or more variables. Regarding the data collection process, this research adopts a survey-based approach, encompassing both extensive and limited populations. Nevertheless, the data under investigation comprises samples drawn from the population, with the intention of identifying relative incidences, patterns of distribution, and interrelationships among the variables.

The research methodology employed in this study is cross-sectional, which captures data at a specific point in time or during a particular period. Cross-sectional studies offer a snapshot of a population or phenomenon at a single moment, allowing for a momentary examination, allowing researchers to examine variables and relationships without the need for longitudinal data collection over an extended duration.

(Sugiyono, 2015) With the ex post facto method. The number of samples was determined based on the sample table of Issac and Michael in (Sugiyono, 2007), a population of 436 people, so at a 95% confidence level the number of samples was 195 people. The determination of the sample was carried out on a probability basis using a proportional stratified random sampling technique.

The research instrument testing consists of two parts. First is the Validity Test, which measures the level of validity or reliability of an instrument. A valid instrument means that the measuring tool used to collect data is valid. Valid means that the instrument can be used to measure what should be measured (Sugiyono, 2018). The second part is the Reliability Test. Reliability is the level or degree of consistency of an instrument. Test reliability relates to the question of whether a test is precise and trustworthy according to the established criteria. The validity and reliability tests were conducted with the assistance of the SPSS v.25.00 for Windows program. The operational definition in this study is as follows:

Table 1. Variable Operational Definition

Variable	Definition	Indicator
Learning independence	Learning independence is an attitude that shows an individual's ability to learn, be responsible, organize and carry out tasks with discipline. Independent learning does not mean learning alone but learning by getting a minimum of help as needed.	1. Independence from others. 2. Behave discipline. 3. Have a sense of responsibility. 4. There is self-actualization. Sugandi, (2013) (Hanifah, 2019)
Self efficacy	Self-efficacy refers to an individual's belief in their own capacity to effectively organize and execute tasks and complete certain tasks to achieve the expected goals/results	Level of task difficulty Students can solve problems based on their understanding of the material, the strength of beliefs, and generalizations. (Woolfolk & Anita, 2007). (Sari & Rozi, 2017, hlm. 925).
Learning motivation	Learning motivation is the existence of encouragement from within and outside oneself in learning activities to fulfill the learning objectives to be achieved	1. There is desire and desire to succeed 2. There is encouragement and need to learn 3. There is appreciation in learning 4. There are interesting activities in learning Sardiman, (2007) Darmawati, (2017)
Environment	The environment is a learning resource that has a lot of influence on the learning process and child development	1. family environment, 2. school environment, and 3. community environment. (Muslih, 2016) and (Slameto, 2010)
Learning Achievement	Learning achievement is all the behavior that students have as a result of the learning process they take, including all the consequences of the learning process that takes place at school or outside school	1. Cognitive 2. Affective and 3. Psychomotor (Syaodih Sukmadinata, 2009) (Rafiola et al., 2020)
Critical thinking skills	Critical thinking is an effort to deepen awareness and compare intelligence of several current and future problems so as to produce a conclusion and idea that can solve the problem.	Interpretation, Inference and Evaluation (Prayuda, 2014) (Edi & Rosnawati, 2021)

Source: From Various Sources, 2023

As for variable measurement In this measurement the researcher uses a Likert scale, this scale is generally placed side by side with the questions or statements that the researcher has planned. That way, respondents are advised to choose the answer categories that have been provided by placing a check mark on the answer and each answer has a different weight.

The data collection technique in this study was the first observation, the second by using a questionnaire or questionnaire. Part of the questionnaire will be distributed in the form of a special link to class XII IPS students. Questionnaires are written sets of questions used to collect information from respondents through personal reports or their knowledge. They are a common research tool for gathering structured data on various topics. The third is documentation, the documentation data that has been collected by researchers is in the form of school profile documents at SMA Negeri 15 Bone. This questionnaire is used to mention methods and instruments.

The data analysis technique in this research involves the use of descriptive analysis and path analysis, which is one of the analytical techniques employed in quantitative research. Descriptive analysis is a method that describes and summarizes various conditions, situations, or variables by collecting data to provide an overview or affirmation of a concept or phenomenon. It also addresses questions related to the current status of the research subjects. Meanwhile, path analysis is used to determine the direct and indirect influence of exogenous variables on endogenous variables through intervening variables.

Path analysis is a further development of multiple and bivariate regression analysis. In path analysis, the correlations between variables are connected to the parameters of the model expressed through a path diagram (Ghozali & Imam, 2014).

Mediating variables, or intervening variables, act as mediators between exogenous and endogenous variables, allowing exogenous variables to indirectly influence the changes or emergence of endogenous variables.

RESULT

This study carried out the results of data quality tests by carrying out several stages, namely

1. Validate the instrument through validity and reliability testing.
2. The classic assumption assessment includes multicollinearity, heteroscedasticity, and normality tests, accompanied by graphical explanations.
3. Test path analysis

Table 2. Multicollinearity Test Results

<i>Correlation Coefficient Matrix</i>	<i>Collinearity Statistic</i>	
	<i>Tolerance</i>	<i>VIF</i>
<i>Sellf Efficacy (X1)</i>	0,620	1.612
<i>Learning Motivation (X2)</i>	0,436	2.293
<i>Environment (X3)</i>	0,954	1.048
<i>Learning Independence (Z)</i>	0,436	2.293

Source: Processed Data Results

From the provided data, it's evident that each independent variable exhibits a tolerance value > 0.1 and a VIF value < 10 . Consequently, we can conclude that there is no multicollinearity among the independent variables in the regression model, allowing us to utilize all independent variables in this study.

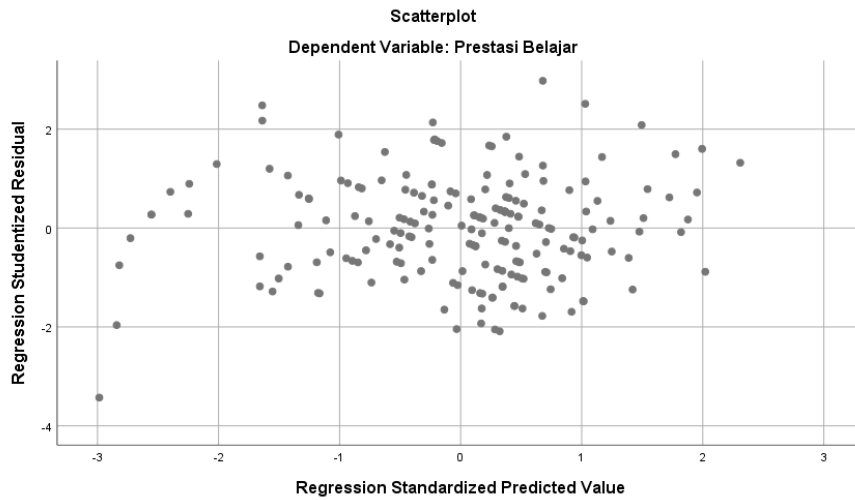


Figure 1. Heteroscedasticity Test

The findings of the heteroscedasticity test show a regression graph where the dots spread randomly, do not form a certain regular pattern and are spread above or below the number 0 (zero) on the Y axis, this indicates that there are no symptoms of heteroscedasticity in the regression model. Thus the regression model is feasible to use to predict the effect of variables of self-efficacy (X1), learning motivation (X2) environment (X3) and learning independence (Z) on learning achievement (Y1) and critical thinking skills (Y2) based on the input of the independent variables.

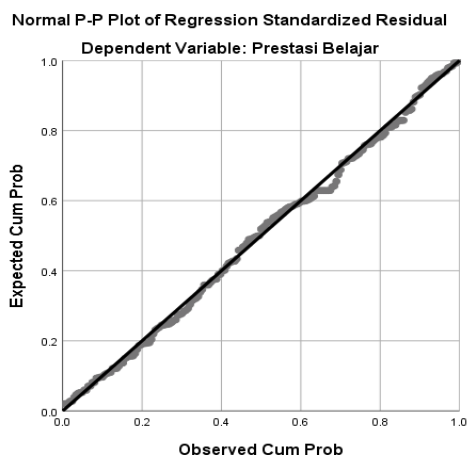


Figure 2. Normality Test

Based on the results of the normality test on the image, it is found that the data spreads around the diagonal line and follows that line, so the regression model fulfills the normality assumptions. Thus the regression equation above actually fulfills the assumption test, namely there is no multicollinearity and heteroscedasticity and meets the normality assumption

Table 3. Statistical Test Path analysis

<i>Parameter structure</i>	<i>Path coefficient</i>	<i>Se</i>	<i>t. hit.</i>	<i>t. tab</i>	<i>Sig.</i>	<i>Decision</i>
X_1 to Z ($pZ.X_1$)	0,229	0,061	3,918	1,960	0,000	Approve H1
X_2 to Z ($pZ.X_2$)	0,589	0,055	10,080	1,960	0,000	Approve H1
X_3 to Z ($pZ.X_3$)	-0,137	0,010	-2,857	1,960	0,005	Approve H1
X_1 to Y_1 ($pY_1.X_1$)	0,224	-	3,300	1,960	0,001	Approve H1
X_2 to Y_1 ($pY_1.X_2$)	0,091	-	1,118	1,960	0,265	Reject H1
X_3 to Y_1 ($pY_1.X_3$)	-0,008	-	-0,148	1,960	0,882	Reject H1
Z to Y_1 ($Py_1.Z$)	0,449	0,063	5,543	1,960	0,000	Approve H1
X_1 to Y_2 ($pY_2.X_1$)	0,210	-	3,085	1,960	0,002	Approve H1
X_2 to Y_2 ($pY_2.X_2$)	0,186	-	2,295	1,960	0,023	Approve H1
X_3 to Y_2 ($pY_2.X_3$)	-0,004	-	-0,074	1,960	0,941	Reject H1
Z to Y_2 ($Py_2.Z$)	0,374	0,057	4,609	1,960	0,000	Approve H1

Source: Processed Data Results

The results of the analysis in the table above show the path coefficient of the test results. From the results of individual testing, for the first path, the path coefficient of the variables X_1 , X_2 , and X_3 to Z is statistically significant, so H_0 is rejected and H_1 is accepted. Whereas for the second path, the path coefficients of the variables X_1 and Z to Y_1 are significant, but X_2 and X_3 are not significant, for

the third path the path coefficients of the variables X1, X2 and Z to Y2 are significant, but X3 is not significant.

Furthermore, to find out the role of independent learning as a mediating or intervening variable, a Sobel test is carried out, as shown in the following table:

Table 4. Sobel Test Results

<i>Indevenden Variable</i>	<i>Devenden Variable</i>	<i>Mediation (Intervening)</i>	<i>P- Value</i>	<i>Description</i>
<i>Self Efficacy (X1)</i>	<i>Learning achievement</i>	<i>Learning Independence</i>	<i>0,0009</i>	<i>Significant</i>
<i>Learning Motivation (X2)</i>	<i>Learning achievement</i>	<i>Learning Independence</i>	<i>0,0000</i>	<i>Significant</i>
<i>Environment (X3)</i>	<i>Learning achievement</i>	<i>Learning Independence</i>	<i>0,0000</i>	<i>Significant</i>
<i>Self Efficacy (X1)</i>	<i>Critical Thinking Skills</i>	<i>Learning Independence</i>	<i>0,00112</i>	<i>Significant</i>
<i>Learning Motivation (X2)</i>	<i>Critical Thinking Skills</i>	<i>Learning Independence</i>	<i>0,0000</i>	<i>Significant</i>
<i>Environment (X3)</i>	<i>Critical Thinking Skills</i>	<i>Learning Independence</i>	<i>0,0000</i>	<i>Significant</i>

Source: Processed Data Result

Based on the Sobel test that the P value is 0.0009 <0.05 in the efficacy cell, 0.0000 <0.05 in learning motivation, and the P value is 0.0000 <0.05 in the environment which indicates that learning independence is significant in intervening the influence of self-efficacy, learning motivation, and the environment on learning achievement or learning independence is significant as a mediating variable.

Based on the Sobel test, it can be seen that the P value is 0.00112 <0.05 in the efficacy cell, 0.0000 <0.05 in learning motivation and the P value is 0.0000 <0.05 in the environment which indicates that learning independence is significant in intervening the influence of self-efficacy, learning motivation and the environment on critical thinking skills or in other words independent learning is significant as a mediating variable.

DISCUSSION

The analysis reveals that self-efficacy, learning motivation, and the environment significantly influence learning independence. This means that students who have high self-confidence are marked by trying to overcome the level of difficulty of the tasks they face by having confidence in their own abilities. This will increase the independence of student learning and most students prefer to study economics offline after the Covid-19 pandemic compared to online learning because they are happy with face-to-face interesting learning, but not a few students also feel happy studying at home because each

task can get help from the surroundings which forms student independence to be low. Students showed they liked studying economics with the game method which formed a sense of fun which made it easier to understand learning compared to the lecture method.

According to Hasyim (2013: 3) states "The student's limited independence in learning is evident through the absence of a sense of responsibility of students in learning and doing assignments, less tenacious when facing learning difficulties and less creative in doing assignments".

This aligns with earlier research by Aristia, (2021), this study identified a substantial connection between self-efficacy and students' learning independence. Additionally, it supports the idea that learning motivation significantly impacts learning independence, consistent with previous findings, with research (Saputra et al., 2021) This suggests that learning motivation has a significant and positive impact on students' high learning independence, although it also has varying effects.

From the analysis results, it's evident that self-efficacy directly and significantly influences student achievement at SMA Negeri 15 Bone in economics learning. This means that students who have high self-confidence are marked by trying to overcome the level of difficulty of the tasks they face by having confidence in their own abilities, this will increase student achievement in economics lessons.

This research contradicts the findings of (Rafiola dkk., 2020), which indicated that self-efficacy has no significant impact on student achievement. This contrast is corroborated by the study conducted (Utari, 2018) that self-efficacy has an effect on student achievement in public high schools in the city of Bandung. However, learning motivation and environment do not directly this research asserts that has a significant impact on learning achievement.

This contradicts the findings of (Rafiola et al., 2020), which suggested that learning motivation has a positive and significant impact on student learning achievement. However, it aligns with the research conducted by Muslih, (2016), whose results indicated that the environment does not affect student achievement at the 5% error level. And this is contrary to research conducted by (Triyono, 2010) there is a partial or simultaneous influence between the family environment, school environment, community environment on student achievement.

Nashar, (2004) emphasized that students' motivation in each learning activity plays a crucial role in enhancing their achievement in specific subjects. this supports that only in certain subjects but not in economics subjects at SMA Negeri 15 Bone based on the results of statistical research analysis, directly on learning achievement.

The analysis results reveal that both self-efficacy and learning motivation have a direct and significant impact on critical thinking skills. This implies that students with high self-confidence are marked by trying to overcome the difficulty level of the tasks they face by having confidence in their own abilities this will increase critical thinking skills of students in economics lessons. However, the environment does not directly have a significant effect on critical thinking skills. most families provide solutions to children from learning problems at school, this is like helping with schoolwork, which is very high, which makes students' critical thinking skills low in carrying out their assignments, this is supported by the relatively high number of students who spend their activities outside the home after school.

This study aligns with the findings of Fitriana et al., (2015), which indicated that self-efficacy has a direct impact on logical or critical thinking ability, as well as with Setiaji et al., (2021) research, which showed that learning motivation has a positive and significant direct effect on critical thinking ability. However, it contradicts the research conducted by Ardiansyah (2020), which suggested that the student environment does not significantly influence students' critical thinking skills.

From the analysis results, it is evident that learning independence has a significant impact on learning achievement and critical thinking skills. aware of the need for learning along with increased student achievement and critical thinking skills.

This research aligns with the findings of Aini & Taman, (2012), Nuryani & Sawiji, (2013), and Hidayat, (2019), which indicate a significant positive impact of independent learning on student achievement. However, it contrasts with the research conducted by Matsani & Mohamad Arief, (2021), which found no significant influence between learning independence and learning achievement. Furthermore, this research is supported by the findings of Wahyuningsih et al., (2020), suggesting that learning independence directly affects critical thinking skills/ability.

The analysis results indicate that learning independence plays a significant mediating role in the influence of self-efficacy, learning motivation, and the environment on learning achievement. This result is in line with the fifth hypothesis that self-efficacy, learning motivation and the environment will have an indirect positive influence on learning achievement through student learning independence, meaning that self-efficacy, learning motivation and the environment have an indirect effect on learning achievement through independent learning tall.

Learning motivation does not directly have a significant effect on learning achievement for students of SMA Negeri 15 Bone majoring in Social Sciences in Economics subject, meaning that learning motivation has an indirect effect on learning achievement through independent learning. Learning motivation

accompanied by learning independence can increase learning achievement, but not only high motivation but low learning independence.

The environment does not directly have a significant effect on the learning achievement of SMA Negeri 15 Bone students majoring in Social Sciences in the subject of Economics, meaning that independent learning is able to mediate the environment indirectly influencing learning achievement. A good environment has not been able to improve the learning achievement of SMA Negeri 15 Bone in economics subjects. A good environment must be accompanied by high learning independence by students to improve learning achievement.

Based on the results of the analysis it is known that learning independence is significant in mediating the influence of self-efficacy, learning motivation and the environment on students' critical thinking abilities. This result is in line with the sixth hypothesis that self-efficacy, learning motivation and the environment will have an indirect positive effect on critical thinking skills through student learning independence, meaning that self-efficacy, learning motivation and the environment have an indirect effect on learning achievement through independent learning.

CONCLUSION AND RECOMMENDATION

The research and discussion results indicate the following: 1) Self-efficacy, learning motivation, and the environment have a positive and significant influence on learning independence. 2) Self-efficacy directly and significantly affects both learning achievement and critical thinking skills. Learning motivation has a direct, non-significant negative impact on learning achievement but a significant positive effect on critical thinking skills. The environment has a direct, insignificant negative impact on learning achievement and critical thinking skills. 3) Learning independence positively and significantly affects both learning achievement and critical thinking skills. 4) Self-efficacy, learning motivation, and the environment have a significant indirect impact on learning achievement and critical thinking skills through their influence on independent learning.

These findings provide insights into the interplay between self-efficacy, learning motivation, the environment, learning independence, learning achievement, and critical thinking skills in the context of the study. Suggestions namely Self efficacy, motivation and student environment at SMA Negeri 15 Bone are in the good category. Therefore it is expected that teachers and students maintain self-efficacy and student learning motivation so that they are maintained in carrying out economic assignments, a sense of enjoyment in economics lessons and confidence in their abilities themselves and better train students' skills in doing economic tasks. And improve communication between teachers and parents/families of students to find out the progress of students at school, by providing guidance to students without reducing their learning independence.

The importance of instilling student learning independence both in the family environment, community environment, and school environment is very important such as not depending on other people, disciplined behavior, responsibility and self-actualization have an effect on improving achievement and critical thinking skills of students at SMA Negeri 15 Bone in the subject of economics . Because good motivation is not accompanied by independent learning, it has not been able to improve student learning achievement and an environment that is not accompanied by independent learning has not been able to improve learning achievement and critical thinking skills.

FURTHER STUDY

This study found that: first, the variable of self-directed learning empirically becomes an intervening variable that can mediate self-efficacy, learning motivation, and the environment's impact on learning achievement and critical thinking ability; second, the variable of self-directed learning not only functions as an independent or dependent variable but also plays a role as a variable capable of mediating the involvement of antecedent variables to consequence variables; third, self-efficacy, learning motivation, and the environment are antecedent variables to self-directed learning; fourth, learning achievement and critical thinking ability are consequence variables of self-directed learning.

Based on the findings above, this research has several implications:

- 1) Methodologically, in Chapter 3, it is mentioned that the analytical tool used is path analysis, which aligns with the research objectives, thus methodologically addressing the research issues.
- 2) Theoretically, the results of this study have implications for the development of Bandura's social cognitive theory and behaviorism. The main finding suggests an expanded role of self-directed learning, not only as an independent or dependent variable but statistically proven to play a role as a mediating variable.
- 3) Practically, improving learning achievement and critical thinking abilities can only be achieved by synergizing the enhancement of self-efficacy, learning motivation, and the environment with the improvement of self-directed learning.

The importance of instilling students' self-directed learning both in the family and school environments is crucial, such as being independent and not relying on others, demonstrating discipline, responsibility, and self-actualization. These factors contribute to enhancing the academic performance and critical thinking abilities of students in SMA Negeri 15 Bone, particularly in the subject of economics. Good motivation alone, without accompanied self-directed learning, is insufficient to improve students' academic achievements. Similarly, an

environment without self-directed learning is incapable of enhancing academic performance and critical thinking abilities.

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