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The Mediating Role of Student Independence on Graduate Quality in Distributed Learning

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This study explores factors that affect graduate quality in distributed learning during the Covid-19 pandemic period. We use survey research methods in conducting the research. We collected the data by distributing online questionnaires =to private high school and vocational high school teachers in Yogyakarta, Indonesia. There were 916 online questionnaires collected from respondents. All data were analyzed using SPSS and Lisrel. The results showed that the teacher quality, the learning process quality, and school management's quality had a significant effect on student independence and graduate quality. In this case, the level of student independence becomes a mediating variable that links the teacher quality, the learning process, and school management with the graduate quality in distance learning. Further research on the process of the effect of student independence on the graduate quality is needed.

Keywords: distance learning, student independence, teacher competencies, education, school management, graduate quality

INTRODUCTION

During the Covid-19 pandemic (Shereen et al., 2020) , world leaders have issued various educational policies in order that the learning process continues to run effectively (De Giusti, 2020; Murphy, 2020) . All parties hope that during the Covid-19 pandemic quarantine period, students can still develop their potential optimally and achieve satisfactory achievements. One of the most popular education policies during the Covid-19 pandemic was schools' physical closure and replacing learning practices with distance learning (Almarashdeh & Alsmadi, 2016; Murray et al., 2020; Selwyn, 2011) . This policy is implemented in almost all parts of the world, including Indonesia.

In general, the implementation of distance learning tends to rely more on the use of modern facilities and technology such as the internet, laptops, devices, and other online learning media (Dubey, 2016; Muir-Herzig, 2004; Nicol et al., 2018). Therefore, one of the positive impacts of physically closing schools is the increased use of technology in distributed learning (Onyema et al., 2020). On the one hand, distance learning using high technology is a positive thing to produce more flexible learning (Andrade & Alden-Rivers, 2019). Still, on the other hand, distance learning has caused the loss of opportunities for children and adolescents to interact socially with social friends, missed opportunities to learn together, and missed stimulating effects of the environment on their mental development (e Oliveira et al., 2020; Tandon et al., 2020).

In pandemic conditions, various challenges in the world of education continue to emerge (Panwala, 2020), especially in developing countries (Mariscal, 2005; Sujarwoto & Tampubolon, 2016), which have not have readiness in terms of educational facilities as well as competency in human resources. In developing countries like Indonesia (Fitrah et al., 2020; Supardi & Hasanah, 2020), massive online-based distance learning is something new. Un-optimal education facilities, the lack of teachers' readiness to carry out distance learning, and the lack of independent student learning (Churiyah & Sakdiyyah, 2020) have become the main problems faced by Indonesian education. Furthermore, parents of students began to worry about the possibility of education disruption during the Covid-19 pandemic, which requires all children to carry out distance learning without paying attention to all the supporting factors that are a prerequisite for implementation (Bialek et al., 2020; Selwyn, 2011).

Indonesia is one of the developing countries in the Southeast Asia Region, which consists of 16,056 islands. Based on the 2019 population census results, there were 3,655,385 students in Indonesia, both studying at public and private schools (BPS, 2020). Currently, many Indonesian students are familiar with mobile learning as a form of distance learning (Yosintha, 2020). The high use of mobile learning has made Indonesia one of the world's largest mobile learning markets (C. Liu, 2015). However, the fully online learning policy implemented throughout the years still raises various concerns about various factors considered disruptive in developing students' potential during the Covid-19 pandemic.

When the quarantine period of the pandemic is uncertain, it is not sure when it will end. Therefore all education components need to take the best resolution so that distance

education can continue to run effectively. Education practitioners, parents, and the Indonesian government need to unravel education's complexities during the Covid-19 pandemic; it is necessary to learn about the dominant factors that affect graduates' quality in distance learning (Abdurrahman, 2016; Teo et al., 2019). The research is fundamental to maintain and build an adaptive education system to support the lives of people who can survive during the Covid-19 pandemic (Alzain et al., 2018; Van Nuland et al., 2020; Wilson & Scott, 2017).

Several studies have shown that the most dominant factors in student learning success are teachers' quality, learning process quality, and education management quality (Entwistle & Ramsden, 2015). Meanwhile, several studies show that students are the main factors determining success or failure (Camp, 2011; De Los Santos et al., 2019; Msane et al., 2020). This study examines the model of the relationship between teacher quality, learning process quality in distance education, school management's quality, and graduate quality that is mediated by student independence. Thus, this study will contribute to current research by measuring the direct influence of the qualities and the processes that link these variables to graduates' quality through student independence as the mediator. Specifically, the main objectives of this study are to:

1. Analyze the effect of teacher quality, learning process quality, and school management's quality on student independence.

2. Investigate the impact of teacher quality, learning process quality, and the school management's quality on graduate quality.

3. Analyze the effect of teacher quality, learning process quality, and the school management's quality on graduate quality through student independence.

Conceptual Framework of Study

This section will describe several concepts regarding graduate quality and the factors that influence it based on various literature. The explanation of the multiple variables in this research is useful to help researchers to be able to construct indicators to form latent variables in this study and strengthen the line of thought of the study.

Graduate quality as an illustration of learning outcomes

Learning outcomes describe what students need to know, understand, and do after completing the educational process as defined from the perspective of knowledge, skills, and competencies (Panigrahi et al., 2018). Graduates' quality is seen as a competence that a person has in a content area. This competency results from many intellectual and non-intellectual variables (Deardorff, 2006; Lamb & Shraiky, 2013; Li, 2013; Nitz et al., 2014). In this study, we explain academic achievement concept (Abudu & Gbadamosi, 2014) and student character (Jeynes, 2019; Marini et al., 2019), based on the teacher's perception. The graduate quality in this research discusses academic competence (Unger & Meiran, 2020) and student independence as seen from indicators of the level of motivation and students' ability to solve problems (Almoayad et al., 2020).

Student independence

Student independence resulting from the lifelong educational process they go through can be a crucial factor in students' academic success and career ((Hasanah, 2019; Kember & Kwan, 2000; Ros et al., 2012). Student independence can also be a mediator that can determine the success rate of distance learning (Gow & Kember, 1990; Krakauer et al., 1999). High learning motivation, knowledge of how to learn, and students' ability to solve problems are indicators that show student independence (Benson-Amram et al., 2016; Benson & Ward, 2013; Kwan & Ko, 2004). These explanations concluded that students' independence in this study is to measure how students' ability to solve problems independently and measure the level of learning motivation during distance learning.

Academic achievement

Academic achievement is an indicator of school success in helping students to grow optimally (Unger & Meiran, 2020). Although many argue about academic achievement in education, intellectual ability remains needed in human resource development programs (Hanushek et al., 2020). Today, people recognize that academic achievement as part of a person's character (Marini et al., 2019).

Characteristics of distance learning

Distance learning has different characteristics to face-to-face learning. Distributed learning requires students' ability and awareness to learn independently and use open pedagogies that allow students to learn and collaborate with the world outside the classroom (Hilton III et al., 2019; Hilton et al., 2020; Wiley & Hilton, 2018). Teachers can conduct best distance learning if students have the tools to access data, have good technical skills, have study habits, have clear goals, love to learn, and have a good personality (Rurato & Gouveia, 2014). In addition to students' readiness, distance learning requires teachers' willingness in carrying out distance learning practices.

Factors that influence graduate quality in distance learning

Several factors influence student or school achievement. These factors are the student's factors (for example, gender, place of residence, family background, learning attitudes, motivation, a network of connections), school factors (infrastructure, location, school size, atmosphere, number and composition of students), and also factors regarding the level of teachers' competence (for example, professional training, attitudes towards teaching, motivation, cooperation, and ability to use technology) (Fintor, 2013; Széll, 2013).

Teacher Competency

As the spearhead of education (Supardi & Hasanah, 2020), teachers have a crucial role in achieving educational goals, both academic and non-academic (Acton, 2018; Brophy & Good, 1986; Mia Hocenski, Ljerka Sedlan König, 2018; Rivkin et al., 2005). The

teachers' ability to carry out effective learning planning is the beginning of creating quality learning (Dolgon, 2015). Besides, teachers must communicate effectively and pleasantly with students (Barnhart & van Es, 2015), because students like teachers who can communicate well (Han, 2017).

The teacher quality in distance learning needs to be supported by the ability to operate high technology (Alkhowailed et al., 2020; Dubey, 2016; Marino et al., 2018; Rashid & Asghar, 2016), the ability to use various learning strategies (Gow & Kember, 1990; Hilton et al., 2020; Kember & Kwan, 2000; McLean et al., 2016). Teachers also need to continue to carry out professional development to become experienced teachers (Benson-Amram et al., 2016; Harris & Sass, 2011; Hughes et al., 2018; Tannehill et al., 2013)

Distance learning process quality

One of the factors identified as directly influencing graduates' quality is the learning process's quality (Netshifhefhe et al., 2016). In general, we can see the learning process's quality from the teacher's ability to carry out directed instruction, inquiry-based instruction, perceived feedback, and adaptive instruction (OECD, 2019). To be able to build a good quality distance learning, teachers need to pay attention to matters outside of technical issues but need to pay attention to how interaction and collaboration, instructional design and delivery; student assessment; and the student quality support services (Markova et al., 2017).

School management's quality

School management (Amanchukwu et al., 2015; Caldwell, 2015) is an essential part of achieving school goals. As a manager and the highest leader, the principal has full responsibility to provide quality assurance to school service users. Therefore, the principal and the management team must build a clear vision and mission as a direction for sustainable school development (Murphy, 2020).

In the context of distance learning, the performance of school management can also be seen from their ability to organize and provide adequate educational facilities in the form of the availability of internet networks and high-tech electronic devices (Almarashdeh & Alsmadi, 2016; Dubey, 2016). Throughout the implementation of distance learning, the availability of online learning tools and media has become a basic requirement for the performance of effective learning to produce student achievement (e Oliveira et al., 2020; Vidalakis et al., 2013)

Based on theoretical exposure, we identified five latent variables in this study, namely Y1 student independence, Y2 graduate quality, X1 teacher quality, X2 learning quality, and X3 school management's quality. The relationship between latent variables is arranged based on the results of the theoretical study that has been carried out; thus, the theoretical framework that explains the relationship between the independent variable and the dependent variable can be illustrated in Figure 1 below:
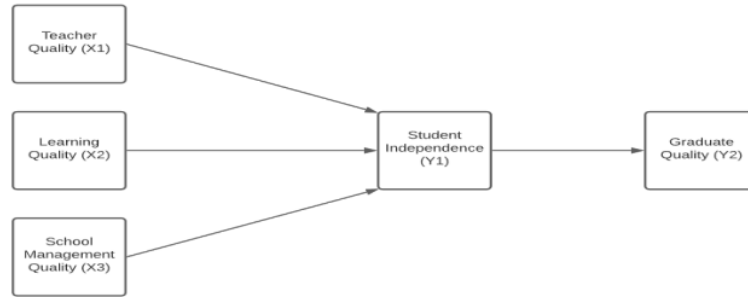
Figure 1
Conceptual framework

Research Hypothesis

Hypothesis 1: The variables X1, X2, X3 can directly affect the level of independence of students

Hypothesis 2: The variables X1, X2, X3 together can directly affect the level of graduate quality

Hypothesis 3: Variables X1, X2, X3 collectively can affect graduate quality (Y2) through student independence in learning (Y1). The variables in this study can be seen in table 1 below:

Table 1
Research variables

Indicator	Latent variable
Students have high motivation during online learning	Student Independence (Y1)
Students are able to solve problems in online learning independently	
Students' academic abilities during online learning have increased	Graduate Quality (Y1)
Students' skills improve during ODL	
Students' moral development increased during ODL	
The teacher makes a creative Distance Learning Plan	Teacher quality (X1)
teachers communicate effectively with students	
Teachers are skilled at operating advanced technology	
Teachers can use various types of distance learning methods	
Teacher do professional development in pandemic period	
teacher-directed instructions are very clear	Teaching-Learning Quality (X2)
inquiry-based teacher-directed instruction	
the teacher provides adaptive instruction	
The teacher provides perceived feedback	
The school has a clear vision	School management's quality (X3)
The principal has good leadership	
The school provides ODL facilities	

METHOD

Procedures and participants

This research is a quantitative study using a survey method (Apuke, 2017; Ball, 2019; Mathers et al., 2010), which uses statistical data as a tool to measure respondents' responses to research questions. We compile a measuring tool by considering various educational theories and learning theories comprehensively and carefully (Ersanilli et al., 2011; Langkos, 2015). The preparation of a useful measuring tool is intended to obtain valid and reliable data (Heale & Twycross, 2015; Ouzouni & Nakakis, 2011).

This study consisted of 358 high school teachers and 558 private vocational school teachers in Yogyakarta, Indonesia, who we randomly selected. The teachers fill out the questionnaire voluntarily between March-November 2020. Description of respondent data in this study can be seen in table 2 below:

Table 2
Description of respondents

			Frequency	Valid Percent
Gender	Valid	M	384	41.9
		F	532	58.1
		Total	916	100.0
School level	valid	Senior High School	358	39.1
		Vocational High School	558	60.9
		Total	916	100

Instrument and data collection process

This study uses an instrument that we construct from the theoretical framework we have done first. High school and vocational high school teachers in Yogyakarta filled out the research instrument through the Google Form which was distributed online from September to November 2020. In the instrument given to the teachers, we made positive statements regarding all variables in the study, where the teachers' perceptions expressed 4-point Likert Scales. Number 1 shows strongly disagree, number 2 shows disagreement, number 3 shows agreement, and number 4 shows strongly agree (Adelson & McCoach, 2010).

Data analysis technique

We calculated the participant description data and tested the reliability of the data using SPSS version 25. The process of testing the hypothesis was carried out using lisrel. To interpret the descriptive data, we compiled the assessment standards as listed in table 3:

Table 3
Criteria for the level of student independence

Average values	Meaning
1-1,9	Very low
2-2,9	low
3-3,9	high
4	Very high

We performed the Cronbach reliability test to find an explanation for the instrument's reliability (Amirrudin et al., 2020) to estimate the level of data accuracy that can be generated by the instruments used to collect data. Below is the results of the instrument reliability test:

Table 4
Instrument Reliability

Variable	Respondent	Cronbach's Alpha	N of Items	Information
Student Independence	916	.654	2	Reliable
Graduate Quality	916	.707	3	Reliable
Teacher Quality	916	.708	5	Reliable
ODL Process Quality	916	.835	4	Reliable
School's Management Quality	916	.756	3	Reliable

FINDINGS

In this section, we present the data coherently. First, we offer descriptive statistics to provide a comprehensive picture of the research data. After that, we present the fit model test's measurement results to obtain the feasibility of further data analysis, and in the last part, we offer the results of hypothesis testing and discussion.

The data displayed is data on teacher opinions about teacher quality, online distance learning quality, and school management's quality and its relation to the graduate quality during distance learning during the Covid-19 pandemic. In this case, we also measure the level of student independence as a mediator variable between X and Y. In this study, 916 questionnaires were collected randomly.

Data description of research results

This data represents teachers' perceptions of distance learning practices in private schools in Yogyakarta, Indonesia. The results of descriptive data processing show that the perceptions of the teachers, various factors that influence graduate quality are as follows:

Teachers 'perceptions of students' independent learning in distance learning

This section describes the teacher's perception of the level of student independence in distance learning. Two main things that teachers hold to measure student independence were learning motivation in distance learning and students' ability to solve learning problems independently. The descriptive analysis results show that the teachers assess students' autonomy level in private schools in Yogyakarta reasonably. This is indicated by the aggregate value of student independence of 2.8, which has not reached the value of 3 as stated in Table 3. More complete data descriptions regarding the status of student independence can be seen in table 5 below.

Table 5
Student independence

Variable	Label	Statement	N	Minimum	Maximum	Mean	Std. Deviation
Student Independence							
4. strongly agree 3. agree	Y1.1	Students have high motivation during online learning	916	1	4	2.77	.689
2. disagree 1. Strongly disagree	Y1.2	Students are able to solve problems in online learning independently	916	1	4	2.76	.700
		Valid N (listwise)	916				
The aggregate of students' independence scores						2,8	

Table 5 shows that, on average, the respondents expressed disagreement with the statements that students had high motivation to learn online of 2.77 and students could solve problems in distance learning of 2.76. In other words, the teachers assessed that students' motivation and ability to solve problems independently tended to be low in distance learning. Based on table 3, the students' motivation and ability to solve problems independently are of low in distance learning.

Graduate quality

In the student learning presences variable, the teachers were asked about the development of students' academic abilities during distance learning, the development of student skills, and student skills development during distance learning. Questions are written with 4 Likert scale answers. The results of calculating descriptive data show the following:

Table 6
Descriptive statistic of graduate quality

Variable	Label	Item	N	Minimum	Maximum	Mean	Std. Deviation
Graduate quality							
4. strongly agree	Y2.1	Students' academic abilities during online learning have increased	916	1	4	2.46	.721
3. agree	Y2.2	Students' skills improve during ODL	916	1	4	2.73	.745
2. disagree 1. Strongly disagree	Y2.3	Students' moral development increased during ODL	916	1	4	2.80	.745
		Valid N (listwise)	916				

Table 6 shows that, on average, the teachers felt less agreeable that there was an increase in graduate quality during the distance learning process. For the academic aspect, the mean value is 2.46, for the skills aspect is 2.73, and for the moral part, the mean value is 2.8. Based on table 3, the graduate quality are of low in distance learning.

Teacher perception about teacher competence in distance learning

In the teacher competency variable, the teachers were asked to self-assess their ability to compile long-distance sharing plans, communication skills with students and their ability to use technology. Each question was netted using 4 Likert scales. We can see the distribution of data regarding graduate quality in table 7 as follows:

Table 7
Descriptive statistic of teacher quality

Variable	Label		N	Minimum	Maximum	Mean	Std. Deviation
		Item					
Teacher Quality							
4. strongly agree	X1.1	The teacher makes a creative Distance Learning Plan	9161		4	3.03	.829
3. agree 2. disagree	X1.2	teachers communicate effectively with students	9161		4	3.33	.696
1. Strongly disagree	X1.3	Teachers are skilled at operating advanced technology	9161		4	2.88	.737
	X1.4	Teachers can use various types of distance learning methods	9161		4	2.79	.717
	X1.5	Teacher do professional development in pandemic period	9161		4	2.94	.766
		Valid N (listwise)	916				

Table 7 shows that the average teacher's response to the learning quality carried out during distance learning shows that the teachers have useful competence. The teachers assessed that the teachers could plan distance learning and communicate effectively well. However, teachers admit that in terms of using high technology, various learning strategies and professional development are still low; it is evident from the average teacher's answers that they have not reached number 3.

Learning quality

Table 8
Descriptive statistic of distance learning quality process

Variable	Label		N	Minimum	Maximum	Mean	Std. Deviation
		Item					
distance learning quality process							
4. strongly agree	X2.1	teacher-directed instructions are very clear	9161		4	3.09	.753
3. agree 2. disagree	X2.2	inquiry-based teacher-directed instruction	9161		4	3.24	.686
1. Strongly disagree	X2.3	the teacher provides adaptive instruction	9161		4	3.13	.705
	X2.4	The teacher provides perceived feedback	9161		4	3.07	.704
		Valid N (listwise)	916				

Table 8 shows that the teachers assessed the distance learning process as going well. Direct instruction from the teacher, inquiry learning, adaptive instruction, or perceived feedback has an average score of 3 on a scale of 1-4. Based on table 3, the distance learning process is high quality in distance learning.

School management's quality

Table 9
Descriptive Statistic of school's management quality

Variabel	Label	Item	N	Minimum	Maximum	Mean	Std. Deviation
school's management quality							
4. strongly agree	X3.1	The school has a clear vision	916	1	4	2.97	.785
3. agree 2. disagree	X3.2	The principal has good leadership	916	1	4	3.20	.716
1. Strongly disagree	X3.3	The school provides ODL facilities	916	1	4	3.14	.781
		Valid N (listwise)	916				

The average predictor value of the school management's quality variable reaches 3. Based on table 3, it can be concluded that the school management's quality in distance learning is classified as high quality.

Model fit test results

To test the fit between indicators and latent variables, we performed a model fit test using SEM analysis, using the RMSEA, GFI, RMSR, and chi-square benchmarks divided by the model's degrees of freedom to measure the absolute fit indicator, which is stronger. NNFI and CFI PGFI to test incremental fit (Hoyle, 2012). The CFA test results show that the value of the Normed Fit Index (NFI) = 0.98, Non-Normed Fit Index (NNFI) = 0.98; Parsimony Normed Fit Index (PNFI) = 0.78; Comparative Fit Index (CFI) = 0.98; Incremental Fit Index (IFI) = 0.98; Relative Fit Index (RFI) = 0.97; Critical N (CN) = 289.29; Root Mean Square Residual (RMR) = 0.027; Standardized RMR = 0.049; Goodness of Fit Index (GFI) = 0.94; Adjusted Goodness of Fit Index (AGFI) = 0.92; and Parsimony Goodness of Fit Index (PGFI) = 0.67. These numbers have met the standards of a good construction model and can be used as a tool to measure latent variables in this study.

Hypothesis testing

Hypothesis testing bypassing the t-test with the help of lisrel. The results of hypothesis testing can be seen in Figure 2 as follows:
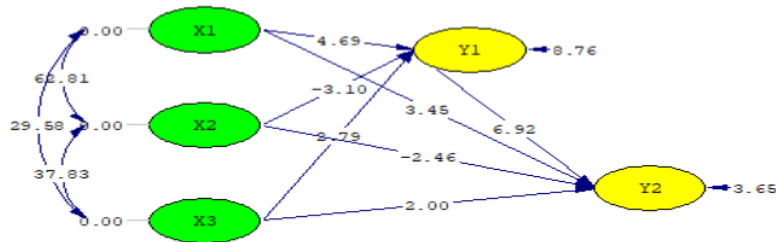
Figure 2
The results of the t-test

Hypothesis 1

Based on the calculation of the hypothesis test using SEM, it is known that the variables X1, X2, X3 collectively can affect graduate quality. The following Structural Equations can show this:

Y1 = 1.34*X1 - 1.00*X2 + 0.25*X3, Errorvar.= 0.56 , Rý = 0.44
    (0.29)   (0.32)   (0.089)   (0.063)
     4.69   -3.10   2.79   8.76

Thus, hypothesis 1 is accepted.

Hypothesis 2

Based on Ha's calculation results: Variables X1, X2, and X3 collectively can affect graduate quality through Y1. The influence of the independent variables on the dependent variable in this study forms the regression formula as follows:

Y2 = 0.51*Y1 + 1.04*X1 - 0.76*X2 + 0.15*X3, Errorvar.= 0.15 , Rý = 0.85
    (0.073)   (0.30)   (0.31)   (0.077)   (0.040)
     6.92   3.45   -2.46   2.00   3.65

Thus, hypothesis 2 is accepted

Hypothesis 3

Variables X1, X2, X3 are proven to jointly affect graduate quality (Y2) through student independence (Y1). Based on the results of the calculation of the hypothesis test, the indirect effect can be seen in Figure 3 below:

	Indirect Effects of KSI on ETA		
	X1	X2	X3
Y1	- -	- -	- -
Y2	0.68	-0.51	0.13
	(0.10)	(0.12)	(0.04)
	6.66	-4.10	2.97

Figure 3
The indirect effect of the independent variable on the dependent variable

Thus, hypothesis 3 is accepted

DISCUSSION

The results showed statistically proven that teacher quality, learning process, and school management have directly and indirectly influenced graduate quality in distance learning; this is indicated by the t-value of each variable above 1.90 (Papke-Shields & Malhotra, 2001). Among all the variables identified affecting graduate quality, the variable student independence highly affected graduate quality in distance learning. Meanwhile, the indirect impact shows that the influence of X1 on Y2 through Y1 is 6.66, the effect of X2 on Y2 through Y1 is -4.10, and the effect of X3 on Y2 through Y1 is 2.97. This study confirms that many determinant factors influence the graduate quality, including teachers, technology, and the learning environment. Whether the influence of these factors is strong or not depends on the teacher's ability to create effectiveness, efficiency, and equity for each aspect of student achievement development (Széll, 2013).

This study strengthens the research results (Shrestha & Dangol, 2019) that student independence is a prerequisite factor that needs effective learning achievement, which is also an influential mediation factor for building student achievement in the distance learning period (Shim & Lee, 2020). This study indicates that student independence is an essential factor in supporting student achievement during the distance learning period. Our research result follows the research results (Dron, 2018; Sari & Zamroni, 2019) that student independence significantly affects graduate quality in distance learning.

The mediating role of student's independently during distance learning (Mendoza-Castejón & Clemente-Suárez, 2020) closely related to the motivation and self-efficacy of students towards the achievements they want to achieve (Chen et al., 2020; R. Liu & Chiang, 2019; Sides & Cuevas, 2020). Therefore, to help students be able to excel during a pandemic, in addition to preparing quality teachers (Akiba et al., 2007; Aspfors & Fransson, 2015; Darling-Hammond, Linda & Baratz-Snowden, Joan, 2007; Darling-Hammond & Berry, 2006); learning quality process (Harris & Sass, 2011; Shipengrover & James, 1999); and school management's quality (Abdurrahman, 2016; Syahril & Hadiyanto, 2018), to develop educational strategies that can increase student independence (Dolmans et al., 2008; Gow & Kember, 1990; Kwan & Ko, 2004; Sudrajat et al., 2020), during distance learning. For this reason, teachers need to develop various learning strategies that can foster student independence in learning to help students get the achievement (Salame & Thompson, 2020; Suntusia et al., 2019).

CONCLUSION

Based on the results of the calculation of hypothesis testing, it is known that all hypotheses are accepted, and all null hypotheses are rejected. In other words, the teacher's quality, the learning process, and school management have a direct and indirect effect on student performance, where the independence of students becomes a mediator that has a strong influence on student achievement. The results showed that the teacher quality, the learning quality, and school management's quality, directly and indirectly, affected student achievement development. Teacher quality has the highest role in

student independence, while student independence directly influences student achievement in distance learning. Thus, teachers, parents, and the government need to create the best strategy to build a level of student independence so that distance learning remains effective in building student achievement.

SUGGESTED

The school must try to improve the teacher quality by including them in training activities in order to improve the teacher quality in managing the learning process that can increase student independence. Parents can also provide supporting facilities and infrastructure that can increase students' independence in learning, with a hope that distance learning will be effective in building graduate quality.

Thus, further research is needed to explore the strategy patterns of the three education centers (parents, teachers, and the government) to become independent a student who is undergoing the learning process during this Covid-19 pandemic. In addition, it is necessary to explore further regarding the patterns of student learning independence that support their learning achievement during the Covid-19 Pandemic.

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