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Digital Leadership to Improve the Pedagogical Competence of University English Lecturers in Samarinda

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Abstract

This study investigates the impact of digital leadership on pedagogical competency. The research method employed was quantitative, with it employing a survey-based methodology. The study's population comprised 162 participants, all of who were English lecturers in Samarinda. Proportional random sampling was used to select a sample of 130 people. A questionnaire was designed in order to collect data, with this passing the validity and reliability tests and meeting the necessary characteristics for a good instrument. Smart PLS 3.0 was then used to tabulate and evaluate the gathered data. According to the findings of this study, digital leadership does indeed have a substantial impact on lecturers' pedagogical abilities. However, the provision of digital guidance and group activities are two aspects that need to be enhanced to increase the quality of digital leadership. Some components to consider when attempting to increase lecturers' pedagogic competencies include improving lecturers' abilities in curriculum development and their understanding of student learning styles, as well as their capacity to understand the emotional aspects of students. This study also found that the pedagogic competence of lecturers also improves when leaders at various levels are able to offer good digital leadership models in their everyday management.

Keywords*: Digital leadership, pedagogic competence, lecturer, university.*

Introduction

Academic institutions must meet strict criteria if they are to prepare human resources (HR) that are fit for the 21st-century workforce, and 21st-century professional lecturers are the people who can meet these requirements (Jan & Jrf, 2017; Ovenden-Hope et al., 2018; Yue, 2019). Much is expected of educators in the modern globalized society, and they must be able to implement a teaching approach that is built upon the UNESCO International Commission on Education's four pillars of learning, namely knowledge, action, community, and being (Zaragoza et al., 2021) Teachers must be capable of taking on problems, academically qualified, and in possession of a wide range of competencies, including professional, pedagogic, personal, and social skills (Alheet et al., 2021; Budiharso & Tarman, 2020; Tütünis, 2020).

Academic demands, according to the literature, will be met by lecturers who have developed their pedagogic competencies over time (Schempp, 2016). In the 21st century, lecturers face seven main

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challenges: 1) teaching in a multicultural society; 2) teaching for the construction of meaning; 3) teaching for active learning; 4) teaching with technology; 5) teaching with a new perspective on abilities; 6) teaching with discretion; and 7) teaching with accountability (Alheet et al., 2021). In order to meet this challenge, the researchers explored the effect of digital leadership on the pedagogic competencies of lecturers.

Most recent studies have investigated these two variables but from a leadership rather than digital leadership perspective. For example, the research of Asmarani et al. (2021) found a positive and significant relationship between leadership and professional competence. In addition, several findings point to teacher's pedagogic competencies being reliant on development policies (Dandalt & Brutus, 2020; Haryanto et al., 2021; Rahmadi et al., 2020), the monitoring and evaluation of teachers' pedagogic competencies (Dandalt & Brutus, 2020; Ibrahim & Benson, 2020), teacher training for pedagogic competence (Bone et al., 2021; Mito et al., 2021; Patrick et al., 2021), and teacher-performance management (Waeyenberg, et al., 2020). Other studies have investigated the effects of leadership in influencing individual creativity and pedagogic competence. In another study, leadership theory was used to investigate the effect on pedagogic competence (Ibrahim & Benson, 2020; Meng et al., 2017).

The literature shows that leadership is highly valued, because without it, any improvement in lecturers' pedagogic competencies is likely to be impaired (Goldhaber & Brewer, 2000). Lecturers of the English Literature study program across Universities in Samarinda generally have limited pedagogic competence. In addition, most are not able to apply pedagogic theory or the applied approach (AA) when participating in the PEKERTI program, and there are even lecturers who have not attended the two compulsory programs (Solikhah & Budiharso, 2020).

Even though they have been certified as professional lecturers, their pedagogic competence does not meet the requirements to be considered professional lecturers with a sufficient level of pedagogic competence. Most of the lecturers have also not been able to prepare syllabus, lecture plans, and semester learning plans (RPS) properly (Mutongoza et al., 2021).

Other evidence shows the limited pedagogic competence of the lecturers for the English study program across universities in Samarinda, with them mostly using classical methods when teaching, such as lectures, questions and answers, and discussions. They are generally unable to practice innovative, creative, and enjoyable teaching methods. Students are given assignments without any feedback from the lecturer.

The effect of digital leadership from academic leaders on the pedagogic competence of lecturers remains unknown, which may be interesting considering that leadership practices do not directly impart pedagogic competencies to lecturers. Examples of leadership in higher education activities, mostly at the general level, also do not directly teach technical pedagogic competencies. Based on the abovementioned background to the problem, it seems appropriate to study the effect of digital leadership on the pedagogic competencies of English lecturers across universities in Samarinda.

Research Questions

The research questions that were used to guide the research process in this study were as follows:

1) Does digital leadership have any influence on the pedagogical competencies of English lecturers in Samarinda?
2) Which aspects of digital leadership do contribute most to improving English lecturers' pedagogical competencies in Samarinda?

Hypothesis

H_1: There is an influence of digital leadership on pedagogic competence.

Review of Literature

Teacher Competency

Defining competence is difficult, and indeed, there is no universally agreed-upon definition. It refers to one's abilities and skills, and a unique competence is only part of it (Bertrand & Porcher, 2020; Morales et al., 2020; Mulder et al., 2005). For example, the term "pedagogic competency" refers specifically to an individual's ability to teach (Ellis, 2011).

After investigating dozens of definitions for competence, it seemed that the most common definition was as follows: "Competence is the ability of an individual or an organization to attain a specific level of performance." Parry (1996) went on to posit that an individual's competence comprises an array of interconnected action skills, including cognitive, interpersonal, affective, and, if necessary, psychomotor abilities, as well as the attitudes and values needed to carry out tasks and solve problems. The ability to perform in a certain context (e.g., job role, organization, position, etc.) is more general.

There are a few things to keep in mind when measuring dimensions of competency, because they cannot be observed directly, only in specific scenarios (Spencer & Spencer, 1993). There are also several levels of competency, such as beginner, intermediate, and expert. Personal competency and system (or team) competency can exist at the same time according to (Roelofs & Beijaard, 2008). As a final note, competence can be transferred from one setting to another to various degrees (Jansen et al., 2012). A comprehensive teaching concept must consider all the different elements of competence, such as the nature of an instructor and his or her knowledge and behavior, as well as the ability to think in any given situation, because learning activities result from lecturers' decisions and actions (Sanders & Roelofs, 2002).

As depicted in Figure 1, this model's starting point is that teacher competence is best expressed through student learning activities. Professional activities, such as instructing students, providing feedback, and cultivating an inclusive classroom environment are all examples of "action" components. It is also important to note that every lecturer activity is framed within an established context, and this means that a teacher must make numerous judgments that can be both long term (i.e., planning ahead) and short term (i.e., in the classroom) in nature (Doyle, 1983). Third, instructors must draw from their professional knowledge base and leverage their personal traits when making judgments and carrying out tasks. Interpretive inferences can be drawn about instructors when they are evaluated in several competence domains, such as classroom instruction and management (Kane, 1992). Using a full-competency model of performance, rather than a reductionist model that focuses on individual aspects of the teaching process, increases the likelihood of obtaining accurate results.

According to the competency model shown in Figure 1, performance standards begin with student activities and intended learning outcomes, which in turn result from a lecturer's actions and judgments. The acceptance of a lecturer's decision is contingent upon that lecturer's professional knowledge base in relation to the specific teaching setting, and for this, Kapoor et al., (2018, p. 12) used the term "functional criteria."

The dimensions and indicators used in this study to assess pedagogical competence are as follows: 1) an understanding of students' physical, social, cultural, emotional, and intellectual characteristics; 2) an understanding of students' family, community backgrounds, and learning needs in the context of cultural diversity; and 3) an understanding of students' learning styles and any learning difficulties (Sanders & Roelofs, 2002).

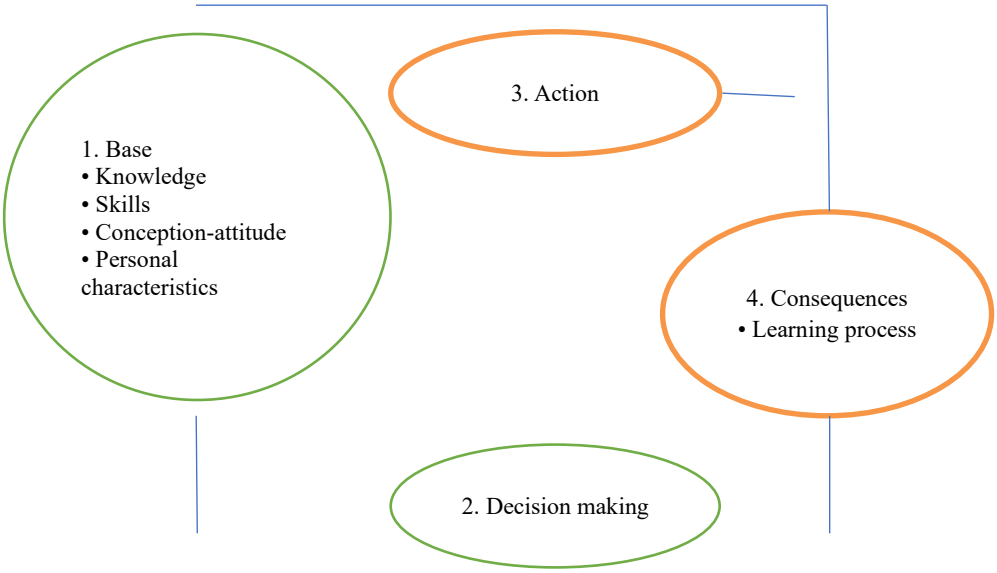

Figure 1. The full-competence performance-interpretation model
Source: Roelofs and Sanders (2007)

Digital Leadership

Through social media and other digital tools, leaders can mobilize their teams to better fulfill organizational goals. Such leaders can be thought of as ambassadors, spokespersons, or influencers who wield authority and direct others in order to achieve the goals established by the organization (Cupit, 2021). Digital leadership is the practice of using digital resources to influence others in a way that will help meet an organization's goals. When a person becomes a digital leader, he or she employs both traditional and innovative digital tools to guide the team toward a common goal (Ubaidillah, 2021). Leadership can be described as a person's ability to encourage a group of individuals to work together to achieve a shared objective by leveraging their individual skills.

One or more leadership styles may be employed by a leader to carry out his or her responsibilities. Indeed, an organization's leadership style is one of the most important determinants of success (Alheet et al., 2021; MartinezI & Tadeu, 2018; Öztürk, 2020). Employee work behavior can be influenced by a variety of factors, but leadership is considered to be the most important situational aspect. Indeed, leaders can inspire their subordinates to engage in new innovative work practices through a variety of existing methods, including digital technology (Fitria et al., 2017).

To encourage employees to adopt difficult and potentially dangerous innovative work behaviors, a digital leadership style for innovative work practices must be present, because the reliance on digital data and facilities is what makes these new behaviors risky and complex (Almatrooshi et al., 2020). By using various digital technologies, digital leaders can help their subordinates to create a sense of self-efficacy (Kark et al., 2018), so while trying to accomplish their goals, they will look for creative digital, data-driven approaches. Leaders can therefore inspire their subordinates to perform at a level beyond previous expectations, because they feel more enthused to be creative and come up with new ideas (Fonseca & Chi, 2011). Employees are also inspired to follow in the footsteps of a digital leader and explore innovative ideas in cyberspace (Hartinah et al., 2020). As a result, a positive association between digital leadership and innovation arises from a leaders' ability to kindle their subordinates' innate abilities to achieve creative and inventive outcomes (Khaliq et al., 2021).

According to the literature, there are links between digital leadership style, innovative work behavior, and staff competency. Leaders define their goals to achieve their work requirements, and incorporating digital data can result in work innovation (Noor, 2019). When employees become more focused on digital data than on promoting new and original activities, however, digital leadership can have a negative impact on employees' innovative work behaviors (De Klerk et al., 2021). The study of Patiar & Wang (2020), on the other hand, found that digital leaders inspire their staff to engage in innovative work behaviors with a mastery of digital data and other digital resources (Rozi et al., 2020).

Methods

Design

This study employed correlation that focuses on univariable linear regression design (Ghozali, 2018). The purpose of this design is to see the linear relationship between digital leadership as the dependent variable Y and pedagogical competence as the independent variable X. The digital leadership is examined to see the dimensions of pedagogical competence of English lecturers from four universities in Samarinda, Indonesia.

Sample

There were 162 English lecturers in the Samarinda area who could participate in this study. Some 80% of this population was selected for investigation, resulting in a sample size of 130 people.

Due to the population being distributed over four colleges and four study programs, the sampling strategy employed the proportionate random sample method (Hair et al., 2010). More specifically, 28% of participants came from the Department of Cultural Sciences, English Language at Mulawarman University; some 30% came from English Education, Faculty of Teacher Training and Education, Mulawarman University; some 24% were English Education lecturers at Widya Gama Mahakam University; and 18% were English Education lecturers at Nahdlatul Ulama University, as shown in Table 1.

Table 1
Total population and research sample

No	Institution	Sample (%)
1	English Language, Faculty of Cultural Sciences, Mulawarman University	28%
2	English Education, Faculty of Teacher Training and Education, Mulawarman University	30%
3	English Education, Widya Gama Mahakam University	24%
4	English Education, Nahdlatul Ulama University	18%
	Total	100%

Source: Data processed

Research Instruments

The digital leadership instrument that was used measured four dimensions and 17 indicators, all of which are presented in Table 2.

Table 2
Digital leadership instrumental grid

Dimension	Indicator	Item Number
Ability to influence others	Influence the minds of others	1
	Influence group activities	2
	Increase loyalty	3
	Increase commitment	4
	Improve discipline	5
Leadership power	As a front person	6
	Spokesperson	7
	Influencer	8
	Gives directions to others	9
	Gives directions digitally	10
Digital-based innovative managerial functions	Achieves organizational goals	11
	Takes advantage of digital tools	12
	Creates a digital environment	13
	Generates innovative ideas	14
	Predicts future conditions based on digital data	15
	Motivates subordinates to produce superior products	16
	Evaluates the product	17

Source: Alise, 2021

The pedagogic competence research instrument was developed with reference to a theory that discusses the four dimensions and 16 indicators shown in Table 3.

Table 3
Pedagogical competency instrument grid

Dimension	Indicator	Item Number
Understanding student characteristics	Understands the physical aspect	1
	Understands social aspects	2
	Understands the cultural aspect	3
	Understands emotional aspects	4
	Understands the intellectual aspect	5
Understanding students' background	Understands family background	6
	Understands students' social environment (culture)	7
Understanding students' learning	Understands students' learning styles	8
	Understands students' learning difficulties	9
Mastering learning principles	Facilitates the development of students' potential	10
	Has mastered the theory and principles of learning	11
	Develops the curriculum	12
	Encourages student involvement in learning	13
	Designs educational learning	14
	Conducts educational learning	15
	Evaluates learning processes and outcomes	16

Source: Roelofs & Sanders, 2007

Validity and Reliability Test

The validity and reliability test (see Table 4) revealed that all items are valid, because they had R values greater than 0.7 with significance levels less than 0.05.

Table 4
Validity and reliability test results

X (Digital leadership)				Y (pedagogic competence)			
No	R	Sig.	Conclusion	No	R	Sig.	Conclusion
X1	0.797	0.001	Valid	Y1	0.791	0.003	Valid
X10	0.969	0.000	Valid	Y10	0.860	0.002	Valid
X11	0.870	0.000	Valid	Y11	0.768	0.000	Valid
X12	0.950	0.003	Valid	Y12	0.913	0.000	Valid
X13	0.821	0.001	Valid	Y13	0.826	0.000	Valid
X14	0.901	0.002	Valid	Y14	0.788	0.000	Valid
X15	0.767	0.001	Valid	Y15	0.799	0.000	Valid
X16	0.875	0.002	Valid	Y16	0.724	0.000	Valid
X17	0.870	0.003	Valid	Y2	0.801	0.002	Valid
X2	0.960	0.003	Valid	Y3	0.860	0.003	Valid
X3	0.876	0.002	Valid	Y4	0.871	0.000	Valid
X4	0.938	0.002	Valid	Y5	0.787	0.003	Valid
X5	0.790	0.004	Valid	Y6	0.856	0.003	Valid
X6	0.892	0.003	Valid	Y7	0.776	0.002	Valid
X7	0.761	0.001	Valid	Y8	0.871	0.000	Valid
X8	0.860	0.000	Valid	Y9	0.773	0.002	Valid
X1	0.797	0.002	Valid				

Source: Results of data analysis

The reliability test (see Table 5) was carried out using composite reliability and Cronbach's alpha. The decision criteria for reliability testing with composite reliability can be presented as follows:

If the composite reliability value is > 0.7, then the questionnaire item is reliable, otherwise it is not reliable.

Table 5
Reliability test results

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
X (Digital leadership)	0.979	0.981	0.981	0.752
Y (Pedagogic competence)	0.967	0.969	0.970	0.669

The composite reliability results presented in Table 5 demonstrate that all composite reliability values for each construct are greater than 0.7, indicating that they are all reliable. Similarly, referring to the values for the Cronbach's alpha, they are all greater than 0.7, indicating that all the constructs are dependable.

Data Analysis

Data of this study were analyzed in two forms: descriptive statistics and inferential statistics. Descriptive analysis provides an overview or description of a data set (Ghozali, 2018), in the form of the average value (mean), standard deviation (SD), variance (V), maximum (Max), minimum (Min), total (Sum), range (Range), and kurtosis. In order to give a clear picture of the characteristics of the respondents, the frequency for each answer on the questionnaire is also used for the descriptive statistics. Second, a requirements analysis—such as testing for the normalcy of data, linearity, and homogeneity—is also important (Ghazali & Latan, 2015). SmartPLS 3.0 was used to test the research hypothesis. Data to answer research question 1 was analyzed using descriptive statistics, and data to answer the hypothesis was processed usling linear regression analysis with the help of SmartPLS 3.0.

Results

To present the results of this study, this section is divided into two parts: classical assumption of test and the hypothesis testing. Classical assumption test include linearity test, normality test, multicollinearity test, heteroscedasticity test, and descriptive data analysis. Additionally, hypothesis testing is addressed to answer the research questions.

Linearity Test

To determine whether or not the model definition was correct, a linearity test was applied. A linear relationship between the variables will be present in good data. If the significance value of the linearity test is less than 0.05, the data satisfies the criteria of having a linear connection (Ghozali, 2018).

Normality Test

This test is important for determining whether or not the residual data is normal. The Kolmogorov–Smirnov test was used to make this determination. If the significance value for this test is greater than 0.05, the data meets the conditions for normality (Ghozali et al., 2018).

Multicollinearity Test

In order to determine if there was any correlation between the two independent variables, the VIF value was evaluated. If the VIF number is less than 10, the data can be considered free from multicollinearity (Ghozali, 2018).

Heteroscedasticity Test

The purpose of the Glejser test is to determine if there is consistent variance in the data. If the significance value of the Glejser test is greater than 0.05, the data is deemed to be free of heteroscedasticity (Ghozali, 2018).

Table 6

Results of the classic assumption tests

No.	Classic assumption	Results	Remarks
1	Linearity	All Sig. (0.000) < 0.05	Linear Data
2	Normality	Sig. (0.200) > 0.05	Residual Normal
3	Multicollinearity	All VIF < 10	Free from Multicollinearity
4	Heteroscedasticity	All Sig > 0.05	Free from Heteroscedasticity

Table 6 shows that the linearity test yielded a significance value of 0.000, which is less than 0.05, thus indicating that the data is linear. The Kolmogorov–Smirnov normality test resulted in a significance value of 0.200, which is again less than 0.05, thus indicating that the regression residual in the model is normal. Multicollinearity is not present, with all of the VIF levels being

below 10. The regression model is also free of heteroscedasticity, because the significance values for the independent variables are all greater than 0.05.

Descriptive Data

Cross-loading analysis was employed to describe the data. The cross-loading value reveals the correlation between each construct's indicator and the indicators of other block constructs. If a measurement model's discriminant validity is higher than that of the other block constructs, it has good discriminant validity. Table 7 shows the results produced by SmartPLS 3.0 on processing the data.

Table 7.
Cross-loading values

No	X	Y
X1	**0.797**	
X10	**0.969**	
X11	**0.870**	
X12	**0.950**	
X13	**0.821**	
X14	**0.901**	
X15	**0.767**	
X16	**0.875**	
X17	**0.870**	
X2	**0.960**	
X3	**0.876**	
X4	**0.938**	
X5	**0.790**	
X6	**0.892**	
X7	**0.761**	
X8	**0.860**	
Y1		**0.791**
Y10		**0.860**
Y11		**0.768**
Y12		**0.913**
Y13		**0.826**
Y14		**0.788**
Y15		**0.799**
Y16		**0.724**
Y2		**0.801**
Y3		**0.860**
Y4		**0.871**

Y5	**0.787**
Y6	**0.856**
Y7	**0.776**
Y8	**0.871**
Y9	**0.773**
Y1	**0.791**

There was a stronger association between the construct and its indicators than there was between the construct and other constructs, according to the cross-loading data. Since the indicators in this block are superior to those in other blocks, we can conclude that they are better.

Hypothesis Testing

Statistical Hypothesis:

H_0 : Digital leadership has no effect on the pedagogic competence of English lecturers at universities in Samarinda.

H_1 : Digital leadership has an effect on the pedagogic competence of English lecturers at universities in Samarinda.

An inner model (structural model) was used to test these hypotheses, and this resulted in values for r-squared output, parameter coefficients, and t-statistics. The significance of the t-statistics, p-values, and relationships between constructs can help establish whether or not a hypothesis should be accepted or discarded. In this study, the SmartPLS (Partial Least Squares) 3.0 program was used to test the hypotheses. The t-statistic was greater than 1.96 with a significance threshold for the p-value of 0.05 (i.e., 5%), while a positive beta coefficient was adopted as a rule of thumb in this investigation. Table 7 illustrates the importance of evaluating the hypothesis of this research, and Figure 2 depicts the findings of this research model.

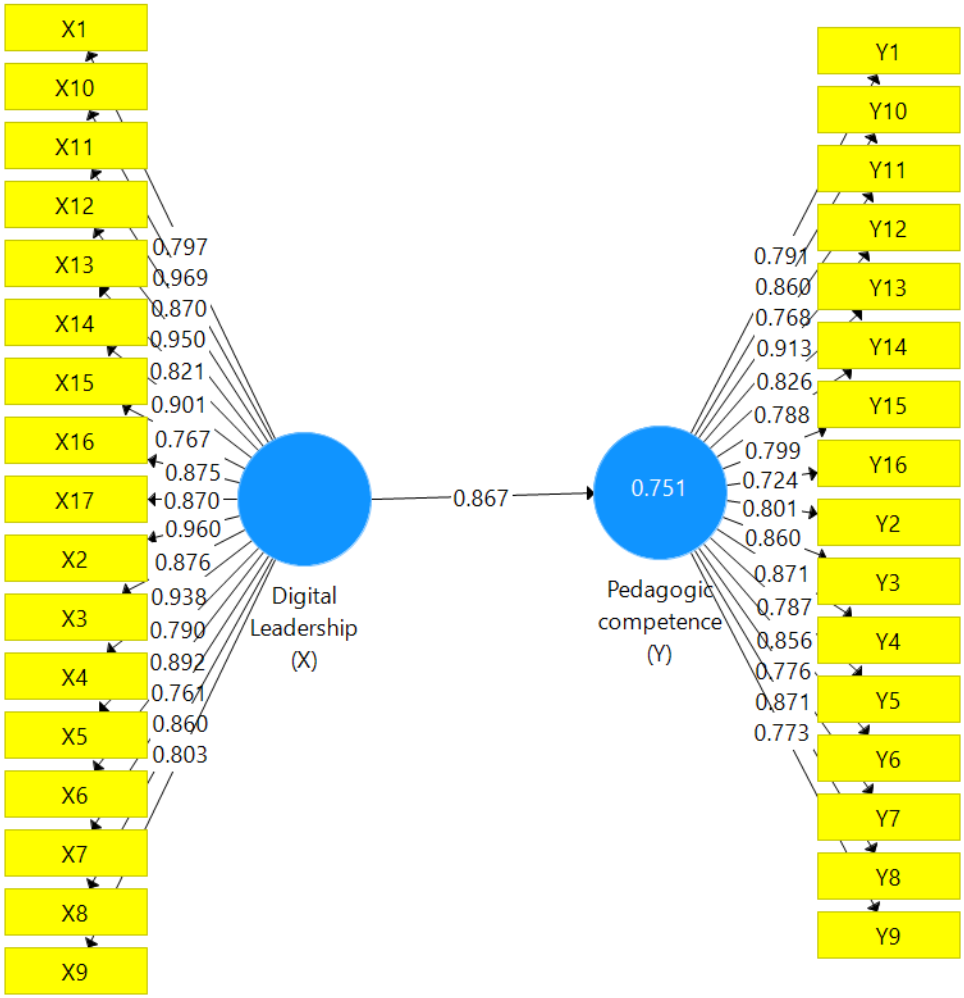

Figure 2. Hypothesis UI results

Based on the results of the hypothesis testing, the path coefficient was 0.867 with an R of 0.751 and an R2 of 0.564. The results of the complete analysis can be seen in Table 8.

Table 8.
Results for the R2, t-Test, and P Value

Effect	Original Sample (O)/R2	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (|O/STDEV|)	P Value
X -> Y	0.564	0.346	0.062	3.850	0.000

The coefficient r derived from the hypothesis testing was 0.703 and the R Square (R2) was 0.564 with a t-statistic of 3.850, which is greater than 1.96, and a p-value of 0.000, which is lower than 0.05. This indicated that we could reject H_0 and accept H_1. Digital leadership therefore does have

a great impact (56.4%) on the pedagogic competency of lecturers at Samarinda's universities. The remaining 43.6% comes from other variables not included in our model.

Each dimension of the digital leadership variable can be viewed in Figure 3 in terms of the size standardized loading factors (SLFs).

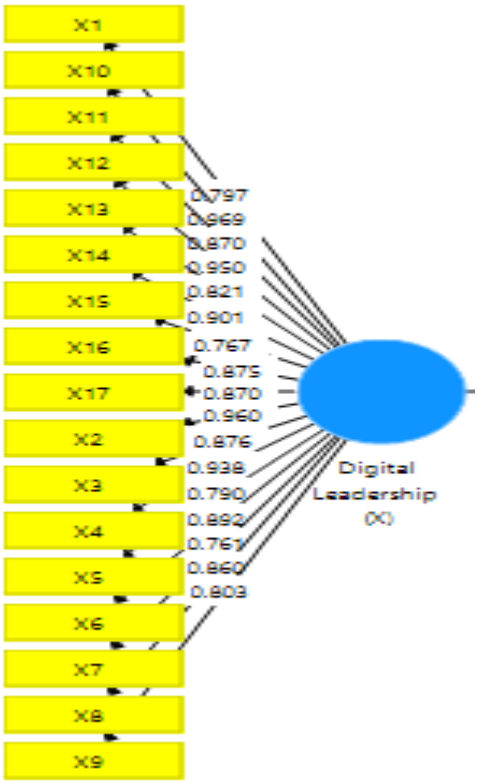

Figure 3. Digital leadership factor weight coefficient

From the SLFs for the 17 indicators, the largest (0.969) is for the tenth indicator (X10), which relates to giving digital direction to subordinates. This is followed by the second indicator (X2, 0.960), which relates to influencing group activities. Furthermore, the lowest value is for the seventh dimension (X7, 0.761), which relates to leading as a spokesperson. From these results, it can be surmised that a good leader should be able to provide digital direction to subordinates. Thus, with improved digital leadership, the head of a study program, department, or faculty can provide digital direction to subordinates, so their competencies will improve.

The SLFs for each dimension of the digital pedagogical competence variable can be viewed in Figure 4.

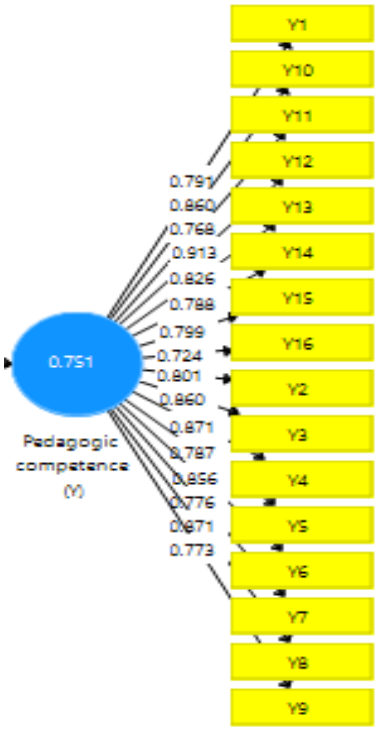

Figure 4. SLFs for the pedagogic competence factor

Figure 4 shows how each aspect of the digital pedagogical ability can be viewed in terms of the SLFs. Of the 17 SLFs, the biggest (0.969) was found to be for the tenth indicator (X10), which measures the provision of digital guidance to subordinates. In addition, the seventh dimension (X7), which is associated with leading as a spokesperson, had the lowest value of 0.761. To summarize these findings, a strong leader can communicate digitally with his or her subordinates. Thus, digital leadership, in the form of leaders providing subordinates with digital guidance, can improve pedagogic competence.

In general, this study discovers the digital leadership does have a great impact (56.4%) on the pedagogic competency of lecturers at Samarinda's universities (p=0.05). Digital leadership has a significant effect to increase the pedagogical competence of English lecturers. Of 17 indicators, the largest (0.969) is derived from giving digital direction to subordinate as the tenth indicator (X10, 0.969) and influencing group activities (second indicator (X2, 0.960). In addition, the lowest contribution is leading to spokesperson in the seventh dimension (X7, 0.761).

Discussion

The research questions of this study are answered that digital leadership is significant to improve English teacher competence. In addition, the most factors affecting the increase include giving

digital direction to the subordinates as the highest indicator and influencing the group communication as the lowest dimension to affect. From these results, it can be surmised that a good leader should be able to provide digital direction to subordinates. Thus, with improved digital leadership, the head of a study program, department, or faculty can provide digital direction to subordinates, so their competencies will improve. It can be decisively concluded that digital leadership has an effect on the pedagogic competence of lecturers in the studied institutions. According to Medley (1977), the more effective the leadership of educational leaders, the greater the improvement in the competency of lecturers will be. Indeed, when the leaders of an educational institution can demonstrate effective leadership, the institution's members will show a high level of competence.

Messick (2016) also discovered that the competence of lecturers is directly influenced by the quality of leadership. When leadership uses effective leadership models, the competency of lecturers inevitably increases as a result. The competencies of lecturers can be extensive, including content, theory, and process models, as well as more general ones.

Lecturers need to improve in terms of curriculum development, teaching style, and ability to understand students' backgrounds and cultures in order to improve their overall professional competence. As stated by Roelofs & Sanders (2007), an empirical analysis of how lecturers' competencies can be improved and the variables that contribute to pedagogic competence is needed to inform the development of lecturers' competencies.

Various pedagogical competency descriptions for lecturers have been established in the United States and the Netherlands as a result of this research. A lecturer's professional responsibilities include pedagogical competency, according to Ovando & Ramirez (2007).

It is possible to draw a distinction between this study's findings and those of Roelofs & Sanders, 2007, which indicated that lecturers must always improve their competencies in the following areas: a) interpersonal competence (i.e., the ability to create friendly relationships and cooperative climates) and b) pedagogic competence (i.e., the ability to create a psychologically safe learning environment for students, thus contributing to their well-being).

Through a review of the literature, this study was able to distinguish personal qualities that help lecturers to succeed, be more professional, and have reliable pedagogic competencies (Creemers, 1991; Sanders & Roelofs, 2002). Indeed, lecturers need to be able to explain the content of a subject matter, as well as find ways to engage students (Gunio, 2021; Waychunas, 2020). To be a

good teacher, one must also be able to explain how one's own behavior influences success in the classroom (Brophy & Good, 2016).

Instead of describing teachers' cognition and decision-making processes (Kagan & Kagan, 2009; Verloop, 2012; Simons, 2010), suggests that researchers should characterize teachers' practical knowledge (i.e., their class and subject area) and the way they construct theories about situations (Verloop et al., 2001). What is more, pedagogical knowledge includes things like how to teach, how to develop a curriculum, and how to classify students. Educational research is increasingly providing such information (Bellon et al., 2010; Oguilve et al., 2021), and taking a standardized knowledge test is a common approach for testing knowledge (e.g., Latham et al., 1999).

This study finds the gaps that digital leadership has not yet investigated in the previous studies and factors affecting the effectiveness of digital leadership such as giving direction to subordinates, communication in groups and leading to spokesperson are the novelty of this research. Digital leadership has its novelty leading to technologies include innovation in communication.

Conclusion

To summarize the findings, when attempting to increase the pedagogic competencies of lecturers, it is important to consider the role of digital leadership. When heads of study programs, departments, and faculties are able to provide strong digital leadership models in their everyday management, it can help the pedagogic competencies of lecturers to improve. Indeed, lecturers benefit from internalizing such digital leadership. In contrast, when a leader is unable to deliver dependable digital leadership, lecturers' will be unable to capture a wide range of good techniques associated with pedagogic competence in the classroom. This study emphasizes its novelty in that digital leadership has new perspective in innovation of communication to strengthen the pedagogical competence of teachers.

To ensure good digital leadership at the study program, department, or faculty level, it is important to provide directions to lecturers digitally while simultaneously paying attention to showing good manners and utilizing good digital communication tools (i.e., facilities and infrastructure), so lecturer competencies can improve significantly. In addition, to improve pedagogic competencies, lecturers must possess curriculum-development skills, be familiar with students' learning styles, and be aware of the emotional aspects of students, so that they can refer to these aspects throughout the learning process, including for setting assignments and ensuring that students learn effectively.

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