

HOW IS SOCIAL MEDIA USED BY INDONESIAN SCHOOL PRINCIPALS FOR INSTRUCTIONAL LEADERSHIP?

Lantip Diat Prasajo*, Lia Yuliana
Universitas Negeri Yogyakarta, Indonesia
*e-mail: lantip@uny.ac.id

Abstract: Information technology and communication adoption, including social media, remains an interesting research theme in this digital era, especially in a developing country like Indonesia. A survey of principals' perceptions in Indonesia on the factors that influence the use of social media for instructional leadership serves as the focus of this study. Using a sequential approach, 122 principals responded to the questionnaire which adapted the Technology Acceptance Model (TAM) containing six constructs namely perceived ease of use, perceived usefulness, perceived attitude, perceived facilitating conditions, subjective norm, and behavioral intention to use technology; and seven of them were interviewed to give further explanations on their perception. The different test was used on for the results of the interview for the quantitative data analysis and thematic analysis. This research finds that the principals' use of the social media in instructional leadership is considered satisfactory. There is no significant difference regarding the use of social media for instructional leadership based on sex or age, but there is a significant difference based on age in which principals aged more than 50 years have the highest average of TAM. From the interviews, it can be concluded that principals use social media for work to make communication more effective and efficient. The use of social media between the principal and teaching staff proves to be a great way for communication and supervision, not only to report on the teaching and learning process, but also other activities such as administrative reports and financial discussions.

Keywords: *school principals, social media, instructional leadership.*

BAGAIMANAKAH PENGGUNAAN MEDIA SOSIAL OLEH KEPALA SEKOLAH DI INDONESIA UNTUK KEPEMIMPINAN INSTRUKSIONAL?

Abstrak: Teknologi informasi dan adopsi komunikasi, termasuk media sosial masih menjadi tema penelitian yang menarik di era digital khususnya di negara berkembang seperti Indonesia. Survei mengenai persepsi kepala sekolah di Indonesia terhadap faktor-faktor yang memengaruhi penggunaan media sosial untuk kepemimpinan instruksional menjadi fokus dalam penelitian ini. Penelitian menggunakan pendekatan sequential, sebanyak 122 kepala sekolah menanggapi kuesioner yang mengadaptasi *Technology Acceptance Model (TAM)* yang memuat enam konstruk, yaitu *perceived ease of use, perceived usefulness, perceived attitude, perceived facilitating condition, subjective nor and behavioral intention to use technology*; dan tujuh di antaranya mengikuti wawancara untuk menjelaskan persepsinya. Uji beda digunakan untuk analisis data kuantitatif dan analisis tematik untuk hasil wawancara. Penelitian ini menunjukkan bahwa penggunaan media sosial kepala sekolah dalam kepemimpinan instruksional dikategorikan memuaskan. Tidak ada perbedaan signifikan mengenai penggunaan media sosial untuk kepemimpinan instruksional berdasarkan jenis kelamin atau usia, namun ada perbedaan signifikan berdasarkan usia, yaitu kepala sekolah yang berusia lebih dari 50 tahun mempunyai rata-rata TAM yang tinggi. Lewat wawancara dapat disimpulkan bahwa kepala sekolah menggunakan media sosial untuk membuat komunikasi lebih efektif dan efisien. Penggunaan media sosial antara kepala sekolah dan guru menghasilkan cara yang bagus untuk berkomunikasi untuk pengawasan dan tidak hanya melaporkan proses belajar mengajar, tetapi juga kegiatan lain seperti laporan administrasi dan diskusi keuangan.

Kata Kunci: *kepala sekolah, media sosial, kepemimpinan instruksional.*

INTRODUCTION

Nowadays, technology plays an important role in providing opportunities for a new way in educational-related activities (Miskiah, Suryono, & Sudrajat, 2019; Muthurman, Veerasamy, & AlHazaizi, 2020). The initial success of educational technology implementation should be supported by factors affecting such as perceived usefulness, perceived ease of use, subjective norm, attitudes, and etc. The betterment of technology integration that informs key contribution to whole aspects of life has been reported to have influenced the way educational stakeholders understand teaching and learning. The importance of technology integration in educational activities should always be updated and reported.

One of the technologies is social media. The establishment of social media has encouraged many educational stakeholders to use this technology. Social media in educational activities is described as the appropriate use of technologies to provide a range of educational-related activities for collaboration. The media was a socially mediated public devices characterized by four criteria: searchability, persistence, replicability, and invisible audiences (Boyd & Ellison, 2007; Rauniar, Rawski, Yang, & Johnson, 2014). Social media is seen to focus on the technologies commonly known as tools of social networking such as Whatsapp, Telegram, Edmodo, Google Form, Facebook, Twitter, and Youtube. These media have been providing collaboration and interaction that can be considered very significant for the betterment of education.

The social media contribution in education has also inspired school principals around the world to use it for instructional leadership. A report from Sheninger (2014) informed that social media have been reported to be robust to communicates with teachers, parents, and other stakeholders in education. This study was done among Indonesian principals. It aimed at examining social media use for instructional leadership, specifically for the communication and interaction with teachers. The study employed the Technology Acceptance Model (TAM) as proposed by Davis (1985). This mix method study will follow a sequential exploratory design proposed by Creswell (2014). Instructional leadership is important. It can result in effective

teaching that would effects better academic performance (Halverson, Grigg, Prichett, & Thomas, 2007). Instructional leadership affects approaches in teaching related to learning outcomes as well as improves students' potential. School leaders should know and understand the problems faced by the teachers. As a result, many researchers offer to the educational leaders to address the concept of instructional leadership in doing duties and responsibilities in their schools (Hallinger, 2005).

In order to ease the communication between the principals and teachers, social media is among technology addressed to achieve the purpose. Social media are very popular to make flexible support for education-related, such as facilitating the supervision, sharing of ideas, as well as building communication among educational stakeholders. They also facilitate support for relevant information support controlled by the users, including school principals and teachers. Those factors have made many educational stakeholders utilize it for not only in the process of teaching and learning but also in other activities (Habibi, Mukminin, Riyanto, Prasajo, Sulistiyo, Sofwan, & Saudagar, 2018). Social media is an online platform that can facilitate content sharing, interacting, and collaborating (Osman & Koh, 2013). People can have their publication for other people to watch, to listen, and to download. The sharing files can be done through online such as YouTube or Slideshare. Social technologies also encourage interactions and communication such as Facebook and Twitter. People can also participate in discussion with WhatsApp and Telegram group (Prasajo, Habibi, Mukminin, Muhaimin, Ikhsan, & Saudagar, 2017)

This study used technology acceptance model (TAM) to measure factors affecting Indonesian school principals perception towards factors affecting the use of social media for instructional leadership. TAM was originally established by Davis (1985). At first, this framework was utilized in economics, particularly in management. Original TAM consists of 4 constructs (Figure 1) perceived usefulness, perceived ease of use, attitude and actual use. In this study, the authors extended the framework within three external variables; facilitating condition, and subjective norm (see Table 1). TAM has been historically adapted as

an investigation tool in education. For example, it was used for the adoption of m-learning (Park, Nam, & Cha, 2012) and for learning management systems (Alharbi & Drew, 2014). However, studies regarding the use of TAM for school principals are still limited. Moreover,

much fewer TAM was reported in a descriptive way, reported differences based on demographic information in relation to the use of social media in education. In addition, not many researchers reported qualitative analysis.

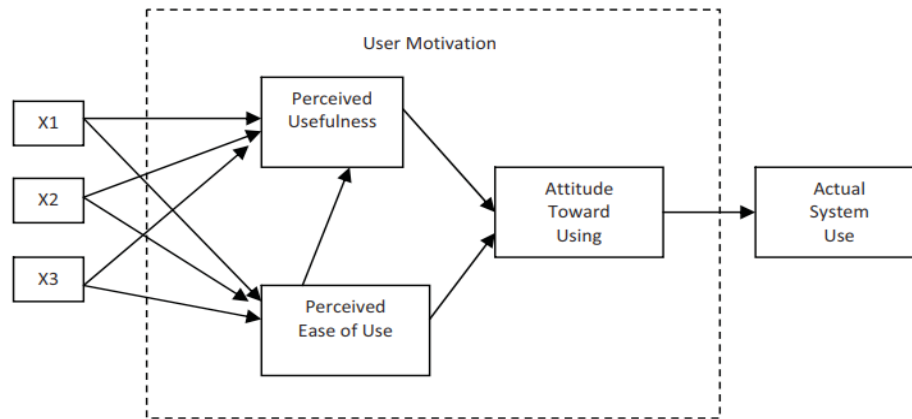


Figure 1. Original TAM (Davis 1986, p. 24)

Table 1. Variables and Context in the Study

Construct	Context of the Study
Perceived ease of use	Perceived ease of use is a person's beliefs that using a particular technology does not need too much effort. In this study context, social media is the technology used by the school principals; if they do not believe that social media are easy to use, they are not likely to use them.
Perceived usefulness	Perceived usefulness is the extent to which a person believes that a certain technology will improve job performance. If the school principals do not believe that social media are useful for instructional leadership, they are not likely to adopt them.
Attitude	Attitude is the feeling towards the use of technology in related activities. Attitude in this study refers to the feeling towards the use of social media for instructional leadership.
Facilitating Condition	Facilitating condition was used as a degree to which a person believes that the institution he/she works would support the use of a certain technology. Facilitating condition should support the use of social media for instructional leadership.
Subjective Norm	In this study, subjective norm is defined as school principals beliefs regarding important people around them would support the use of social media for their instructional leadership.
Use of technology	Use of technology in this context is the use of social media for instructional leadership.

METHODS

The sequential explanatory design applied in this study aimed at elaborating phenomena of the study within involving some data sources as well as establishing reliability and validity of the findings (Creswell, 2014). This design relies on the quantitative data supported by qualitative data to achieve the purposes of the study. Through this method, an investigation of TAM factors of Indonesian school principals regarding the use

of social media for instructional leadership. In mix method study, multiple data sources were conducted such as observation, experiment, survey, observation, interviews, discussion, and documentation (Stake, 2010). For this study, the authors decided to conduct a quantitative process followed by a qualitative process (Muhaimin, Habibi, Mukminin, Pratama, Asrial, & Harja, 2019).

Instrumentation

Quantitatively, the instrument for the survey includes a nominal scale to recognize respondents' demographic information and factors affecting the use of social media among Indonesian school principals. The instrument was adapted from the original scales of TAM (Davis, 1989; Munir, 2010) and other relevant studies (Iqbal & Bhatti, 2017; Muahimin *et al.*, 2019; Park *et al.*, 2012). To make the adapted instrument suit the setting of social media for instructional leadership, wording changes were addressed for the easiness of the instrument's understanding for the respondents to fill in. Three experts were involved in the discussion as part of content validity (Habibi, Yusop, & Razak, 2020a; Lynn, 1986). The authors also had a discussion session with four principals to understand their perspectives of the instrument as part of face validity. Nineteen indicators were listed for the part 2 instrument. A 5-point Likert scale, with 1 being the lowest score (strongly disagree) and 5 being the highest (strongly agree), was administered.

A semi-structured interview set of questions were developed based on the TAM instrument developed in the quantitative part. Similarly to the quantitative instrument development, the authors also discussed the interview questions with three experts in the area of educational technology to establish the validity of the question (Creswell, 2014). Questions for the interview included six main topics; perceived usefulness, perceived ease of use, subjective norm, attitudes, supporting condition, and self-efficacy, as well as the use of technology. The wordings of the semi-structured interview differed from one to another since they were open-ended. The instrument was translated

from English to Indonesian and from Indonesian to English as part of back translation process (Behr, 2017; Habibi, Yusop, & Razak, 2020b).

Participants and Data Collection

An online survey instrument was distributed to Indonesian school principals from January to March 2020 for quantitative phase. The population of this mix method study was all Indonesian school principals in one Indonesian province. Using *G power, the authors computerized the minimal number of survey respondents. Based on the process, one hundred and twenty respondents should be involved in six variables. The authors managed to obtain responses from 122 school principals. For the qualitative phase, the authors used convenience sampling (Muhaimin *et al.*, 2019). Administered phone calls to some random respondents of the survey. Prior to the communication, the authors asked them to fill in the agreement column that was provided in the survey instrument. As a result, seven out of eleven respondents contacted were available to have the interview sessions. The authors masked their identity with initials, for example, School Principal (SP). The initials are SP1, SP2, SP3, SP4, SP5, SP6, and SP7. The participants' demographic information and their initials are presented in Table 2.

There were five male school principals and two female school principals. Based on their educational background there were two school principals who graduated from bachelor degree, while five school principals had completed their master degree. In terms of age, there was a 30-40 year-old school principal, two 40-50 year-old school principals, and four school principals aged more than 50 years old.

Table 2. Demographic Information of Research Participants

No.	Subject	Gender	Education Background	Age	Remarks
1.	SP1	M	S2	K3	5M, 2F
2.	SP2	F	S1	K1	2S1, 5S2
3.	SP3	M	S2	K3	2K1, 2K2, 4K3
4.	SP4	M	S2	K3	
5.	SP5	F	S1	K2	
6.	SP6	M	S2	K3	
7.	SP7	M	S2	K2	

Note: M: Male, F: Female, S1: Bachelor Degree, S2: Master
K1 : 30-39, K2: 40-50, K3: >50

Data Analysis

The survey data collected through the online survey was downloaded and transferred to Microsoft excel. Before the main analysis, the authors screened all collected responses for the outliers and missing value data (Hair, Black, & Babin, 2010; Pallant, 2016). To understand the significances based on the demographic information regarding the use of social media among Indonesian school principals for instructional leadership, applied t-test and one way Analysis of Variance (ANOVA). The analysis processes using Statistical Package for Social Sciences (SPSS 23).

For the qualitative phase, analyzed the data through within- and across-case analysis (Habibi, Mukminin, Najwan, Haswindy, Marzulina, Sirozi, Harto, & Sofwan, 2018; Yin, 2017). The within-case analysis is a process of case's deep elaboration, as a stand-alone object, particularly an attachment to a specific case. The data were transcribed by using Microsoft Office. After the transcription process, coded them using open, axial, and closed coding. Before the coding process, the data were read and re-read to make important highlights and connection examination as well as redundancies checking. In establishing the trustworthiness as well as verify the accuracy of the report, triangulation, member checking, and reflexivity were conducted (Abrar, Mukminin, Habibi, Asyraf, Makmur, & Marzulina, 2018; Creswell, 2014).

FINDINGS AND DISCUSSION

Findings

Social Media Used by Indonesian School Principals for Instructional Leadership (Quantitative)

Reported the Mean, Standard Deviation (*SD*), for the descriptive statistics. All variables and indicators achieved Mean greater than four. The scores can be described as satisfactory as the

Likert scale range from one (strongly disagree) to five (strongly agree). Perceived usefulness towards the use of social media among school principals achieved the highest Mean, on the opposite the lowest variable mean is the use of technology, social media. All Cronbach's alpha values of the constructs exceed .70. The results of alpha test using SPSS ranged from .752 to .908. Complete results of descriptive analysis is shown in Table 3.

Table 3. Overall Mean and Standard Deviation (*N* = 122)

Construct	Mean	SD
Perceived usefulness	4.41	.463
Perceived ease of use	4.27	.485
Subjective norm	4.22	.546
Facilitating condition	4.14	.664
Attitude	4.33	.544
Use of technology	4.08	.546

This study informs whether the demographic information (gender, educational background, and age) is different regarding the use of social media among Indonesian school principals for instructional leadership. The t-test was addressed to evaluate the difference regarding the use of social media based on gender and educational background while ANOVA was administered for of the use of social media in terms of age.

Based on the results of the study, there are no significant difference based on gender regarding for instructional leadership. Similarly, no significant difference was reported based on the educational background ($t = 1.205$; $p = .230$). On the other hand, a significant difference was found among age group regarding the use of social media for instructional leadership ($F = 4.953$; $p = .009$). The complete results of the differences test can be found in Table 4 and 5.

Table 4. Differences of Leadership Result Gender and Educational Background

Independent Variable		<i>n</i>	Mean	SD	<i>df</i>	Sig.	<i>t</i>	Mean Difference
Gender	Male	85	4.06	.516	119	.691	2.595	-.0435
	Female	36	4.11	.619				
Educational background	Undergraduate	43	4.00	.585	119	.230	1.205	-.12500
	Master	78	4.12	.523				

Note: $p < .05$

Table 5. ANOVA Results Regarding Age Difference

Demography		<i>N</i>	Mean	Mean Square	<i>F</i>	<i>Sig.</i>
Age	30-39	9	3.7222	1.390	4.953	.009*
	40-50	24	3.8854			
	>50	88	4.1705			

Note: $p < .05$

Social Media Used by Indonesian School Principals for Instructional Leadership (Qualitative)

The current study findings reported in this study encouraged the quantitative findings. The authors reported the qualitative results based on the proposed framework, TAM. Therefore, there are five pre-determined themes

elaborated in this part of finding excluding the use of social media for instructional leadership; perceived usefulness, perceived ease of use, attitude facilitating condition subjective norm. The substance of qualitative research results are presented in which covers are presented in Table 6.

Table 6. The Results of The Study will be Presented Qualitative

No.	Indicator	Findings
1.	Perceived usefulness	Social media in their work to make communication more effective and efficient. The use of social media between the principal and the teacher produces a great way to communicate for supervision
2.	Easy to use	Social media is not difficult to use. Although most of the principals involved in this study were above fifty years old, that did not prevent them from informing them that easy-to-use social media could use WhatsApp and Facebook; these two social media are very popular. They can be very useful for many people, including in the Education sector. Develop functions to be more useful for coordination activities in schools
3.	Attitude	This positive attitude can be seen as support for the continued use of social media for school principals in developing countries such as Indonesia. Stakeholders will use social media for their activities in establishing communication with other parties involved, such as teachers, students and parents of students.
4.	Subjective Norm	The use of social media for instructional leadership is influenced by peers and other teachers in the school where they work, learning together in using social media. Teachers can promote Facebook as a discussion sharing platform.
5.	Facilitating Condition	The use of social media for instructional leadership has been supported by school access believing that social media is supported by appropriate resources such as Internet access that is easily accessible and fast. Their school has been equipped with technicians who help maintain the technology provided by the school.
6.	use of Technology	Continuation related to technology integration in education, especially for school principals must always be done. The principal must benefit from the latest training that is carried out throughout the year.

Discussion

The purposes of this study are to investigate factors affecting Indonesian school principals' use of social media for instructional leadership. The difference regarding the use based on three demographic information, namely gender, educational background, and age. Through the main method, the authors reported these purposes quantitatively. In addition to the quantitative data analysis, the authors also reported our qualitative investigation involving seven principals who agreed to be interviewed.

In the field of education, the use of social media to improve learning leadership is quite effective for increasing teacher competence and professionalism. The teacher is the spearhead of the success of education at the classroom level, while the principal is the spearhead of the success of education at the educational unit level. The use of social media effectively and efficiently in learning leadership also has an impact on the optimal performance of school principals, especially regarding learning leadership. The use of social media between the principal and the teacher produces good communication, especially for supervision and not only reporting on the teaching and learning process carried out by the teacher, but also other school activities such as administrative reports and financial discussions.

In the end, the effective and efficient learning leadership of the principal will have an impact on the achievement or exceeding of national education standards. If this is the case, then the education unit will become a superior school, which is built by good management and leadership, and supported by professional teachers. For that all, of course, it is necessary to build quality communication, both between teachers and school principals, teachers and students, between principals and education personnel, as well as school communication with the community.

The findings of the quantitative and qualitative approaches inform that the constructs and indicators' Mean of the principals' acceptance of the use of social media for instructional leadership is in the level of satisfactory. The quantitative analysis informs that no significant differences are statistically found regarding the use of social media-based. The data analysis of this mix method study revealed that Indonesian

school principals believed that the use of social media for instructional leadership is very beneficial. It improves the communication, coordination, and supervision between teachers and students. By incorporating social media in such activities, school principals in Indonesia can better their instructional leadership. A similar result was also reported by Habibi *et al.* (2018) who highlighted that social media improve some educational activities, especially during teaching practices.

Perceived Usefulness

The interview revealed that the improvement of communication between the school principals and teachers was the most frequently reported regarding the use of social media for instructional leadership. interviewed seven school principals and all of them informed that they used social media in their job to make the communication to be more effective and efficient. They perceived that the use of social media between them and teachers produced a great way to communicate for supervision and report regarding not only teaching and learning process but also other activities such as administrative reports and financial discussion. The challenges within the school parent organization were also reported by a few interviewees. For instance, two of the principals had their opinions on the interview session,

“Social medial like WhatsApp have the function for the users to communicate in an effective and efficient way. I can directly inform important things regarding teaching and learning activities and other things.” (SP2)

“It is nice that we live in current technology availability that everything can be easy for us to get. One of the examples is the use of social media. They have helped many people do their job including communication, supervision, and other functions.” (SP4)

Similarly, another interviewee stated that he frequently discuss anything regarding problems faced by the teachers within our institution. In a Telegram group, he stated that he shared about the challenges faced by both students and teachers in the school parent organization.

Easy to Use

Besides the benefits offered by social media for school principals, some of the participants believe that social media were not difficult to use. Even though most of the school principals involved in this study are above fifty years old, it does not hold them from informing that social media are easy to use. Two of the principals inform.

“Although I am now fifty-six, I am open to using social media. I can use WhatsApp and Facebook; these two social media are very popular. They can be very beneficial for many people, including in the educational sector.” (SP6)

“I can use a wide range of social media application. They are easy to use and simple.” (SP3)

Although the school principals think that social media are easy to use, they reconfirmed that they can be improved for instructional leadership use. As one of the participants of the interview said.

Attitude

Further, the interview also revealed that social media have more positive impacts rather than negative impacts within the educational sector. This positive attitude can be seen as support toward the continuation of social media use for school principals in the school of developing countries like Indonesia.

I think social media have a very positive effect in the future for education. Teachers and student would benefit the most. However, school principals and others involved in education will have equal opportunity.” (SP1)

Social media and other technological advancements in education can not be avoided and should always be embraced positively for its strong impact on educational development and betterment.

Subjective Norm

The school principals reported that the use of social media for instructional leadership was affected by their peers and teacher in the school where they work. Most of the interviewees revealed the facts. Two of them informed that

their peers taught them how to use the media. Meanwhile, one of the participants specifically informs his teachers ‘role in promoting Facebook as a discussion sharing platform. He said,

“One of my friends introduced the social media to me when we attended a training conducted by educational ministry in my province. Since then, I am a daily user of social media. In 2018, I initiated the use of social media to ease my job as a school principal.” (SP2)

Facilitating Condition

From the result of the interview, it is reported that the school principals involved in this study perceived social media use for instructional leadership have been supported by easy and quick access in the school and outside the school. Almost all of the principals believed that social media are supported by appropriate resources such as the easy-accessed and fast-accessed of the Internet. Two of the principals said,

“I think the infrastructure outside and inside the school has been more than good. The Internet has been an easy tool for Indonesian people to reach. No problems faced regarding the tools for supporting the use of social media.” (SP3)

Use of Technology

The integration of technology should always be supported by sufficient technicians. Most participants revealed that their schools have been provided with technician assisting the maintenance of technology provided by the school.

Indonesian school principals also believed that social media application are not difficult to handle. Even though most of them are not millennial who are accustomed to using social media on a daily basis; they still have the ability to run the applications, especially Facebook and WhatsApp, for their job activities. This finding corroborates Rauniar *et al.* (2014). Social media are easy to use which is the factor to affect the perceived usefulness in education. These results suggest that social media could produce a more lively and comfortable environment with their user-friendly and simple to use.

The school principals in this study also perceived that the use of social media in instructional leadership was affected by their

peers and teachers. This report could be triggered because the influences of findings east culture that put high habits of respecting other people, including their opinions. As a result, they tend to be influenced by the suggestion and advice of their peers and teachers within their school environment (Muhaimin *et al.*, 2019).

The report of this study that the attitude of the participants was positive towards the use of social media in instructional leadership. In general, Indonesian school principals positively embrace the use of technology in educational activities. Many studies also revealed the positive attitude towards the use of technology among their participants (Alharbi & Drew, 2014; Park *et al.*, 2012). The last variable in this study, facilitating condition, was also perceived well by the Indonesian participant. The infrastructure and human resource have been reported to be adequately available in supporting the use of social media in instructional activities. They believed easy access to more information, resources, and tools, as well as human resources and training support, facilitate motivation to use the social media inside the school but also outside the school. A prominent result of study in Indonesian context has also been revealed similar phenomenon (Habibi *et al.*, 2018).

CONCLUSION

The findings of the current study indicate that the Indonesian school principals' use of social media is positively perceived. The perceived usefulness, perceived ease of use, subjective norm, attitudes, supporting condition, and self-efficacy, as well as use of the social media, obtain high Means. The study findings are important to be reported for the continuation of technology integration for school leadership in the future. School should be enriched by leadership to support the integration of technology in teaching and learning activities as well as the administrative jobs. Future studies on the implementation of technology for instructional leadership should always be conducted. The current study is limited by the number of principals involved; therefore, more respondents are strongly encouraged for widely accepted results. In addition, longitudinal studies should also be done in various kinds of technology. A complex statistical report for a strong analysis in the relationship between TAM

factors with path analysis is also recommended.

ACKNOWLEDGEMENT

The authors received grants from Indonesian Ministry of Research and Technology/ National Agency for Research and Innovation.

REFERENCES

- Abrar, M., Mukminin, A., Habibi, A., Asyraf, F., Makmur, M. & Marzulina, L. (2018). If our English isn't a language, what is it? Indonesian EFL student teachers' challenges speaking English. *The Qualitative Report*, 23(1), 129-145. <https://nsuworks.nova.edu/tqr/vol23/iss1/9>.
- Alharbi, S., & Drew, S. (2014). Using the technology acceptance model in understanding academics' behavioural intention to use learning management systems. *International Journal of Advanced Computer Science and Applications*, 5(1), 143–155. <https://doi.org/10.14569/IJACSA.2014.050120>.
- Behr, D. (2017). Assessing the use of back translation: The shortcomings of back translation as a quality testing method. *International Journal of Social Research Methodology*, 20(6), 573-584. <https://doi.org/10.1080/13645579.2016.1252188>.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of computer-mediated Communication*, 13(1), 210-230. <https://doi.org/10.1111/j.1083-6101.2007.00393.x>.
- Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* (Doctoral dissertation, Massachusetts Institute of Technology). <http://hdl.handle.net/1721.1/15192>.
- Davis, F. D. (1989). Perceived usefulness,

- perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>.
- Habibi, A., Mukminin, A., Najwan, J., Haswindy, S., Marzulina, L., Sirozi, M., Harto, K., & Sofwan, M. (2018). Investigating EFL classroom management in pesantren: A case study. *The Qualitative Report*, 23(9), 2105-2123. <https://nsuworks.nova.edu/tqr/vol23/iss9/6>.
- Habibi, A., Mukminin, A., Riyanto, Y., Prasoj, L. D., Sulistiyo, U., Sofwan, M., & Saudagar, F. (2018). Building an online community: Student teachers' perceptions on the advantages of using social networking services in a teacher education program. *Turkish Online Journal of Distance Education*, 19(1), 46-61. <https://doi.org/10.17718/tojde.382663>.
- Habibi, A., Yusop, F. D., & Razak, R. A. (2020a). The role of TPACK in affecting pre-service language teachers' ICT integration during teaching practices: Indonesian context. *Education and Information Technologies*, 25(3), 1929-1949. <https://doi.org/10.1007/s10639-019-10040-2>.
- Habibi, A., Yusop, F. D., & Razak, R. A. (2020b). The dataset for validation of factors affecting pre-service teachers' use of ICT during teaching practices: Indonesian context. *Data in Brief*, 28, 1-7. <https://doi.org/10.1016/j.dib.2019.104875>.
- Hair, J. F., Black, W. C., & Babin, B. J. (2010). *Multivariate data analysis*. New Jersey, NJ: Pearson Prentice Hall.
- Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to fade away. *Leadership and Policy in Schools*, 4(3), 221-239. <https://doi.org/10.1080/15700760500244793>.
- Halverson, R., Grigg, J., Prichett, R., & Thomas, C. (2007). The new instructional leadership: Creating data-driven instructional systems in school. *Journal of School Leadership*, 17(2), 159-194. <https://doi.org/10.1177/105268460701700202>.
- Iqbal, S., & Bhatti, Z. A. (2017). What drives m-learning? An empirical investigation of university student perceptions in Pakistan. *Higher Education Research & Development*, 36(4), 730-746. <https://doi.org/10.1080/07294360.2016.1236782>.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, 35(6), 382-386. <https://doi.org/10.1097/00006199-198611000-00017>.
- Miskiah, M., Suryono, Y., & Sudrajat, A. (2019). Integration of information and communication technology into Islamic Religious Education Teacher Training. *Cakrawala Pendidikan*, 38(1), 130-140. <https://doi.org/10.21831/cp.v38i1.23439>.
- Muhaimin, M., Habibi, A., Mukminin, A., Pratama, R., Asrial, A., & Harja, H. (2019). Predicting factors affecting intention to use web 2.0 in learning: Evidence from science education. *Journal of Baltic Science Education*, 18(4), 595-606. <https://doi.org/10.33225/jbse/19.18.595>.
- Munir, M. (2010). Penggunaan Learning Management System (LMS) di perguruan tinggi: Studi kasus di Universitas Pendidikan Indonesia. [The use of Learning Management System (LMS) in higher education: A case study at the University of Education Indonesia]. *Cakrawala Pendidikan*, 27(1), 109-119. <https://doi.org/10.21831/cp.v1i1.222>.
- Muthurman, S., Veerasamy, R., & AlHazaizi, M. (2020). E-learning to enhance educational competitiveness in the sultanate of Oman. *International Journal of Innovation, Creativity and Change*, 11(2), 84-92. https://www.ijicc.net/images/vol11iss2/11205_Muthurman_2020_E_R.pdf.
- Osman, G., & Koh, J. H. L. (2013). Understanding management students' reflective practice through blogging. *The Internet and Higher Education*, 16, 23-31. <https://doi.org/10.1016/j.iheduc.2012.07.001>.

- Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. New South Wales: Allen & Unwin.
- Park, S. Y., Nam, M.-W., & Cha, S.-B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, 43(4), 592–605. <https://doi.org/10.1111/j.1467-8535.2011.01229.x>.
- Prasojo, L. D., Habibi, A., Mukminin, A., Muhaimin, M., Ikhsan, I., & Saudagar, F. (2017). Managing digital learning environments: Student teachers' perception on the social networking services use in writing courses in teacher education. *The Turkish Online Journal of Educational Technology*, 16(4), 42-55.
- <http://www.tojet.net/articles/v16i4/1646.pdf>.
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6-30. <https://doi.org/10.1108/JEIM-04-2012-0011>.
- Sheninger, E. (2014). *Digital leadership: Changing paradigms for changing Times*. Thousand Oaks, CA: Corwin Press.
- Stake, R. (2010). *The art of case study research*. Thousand Oaks, CA: Sage Publication.
- Yin, R. K. (2017). *Case study research and applications: Design and methods*. New York, NY: Sage Publications.