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Android-based Leadership Learning Assessment: Teacher Performance Support Applications in Indonesia

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<p>Article History</p> <p>Article Submission 11 February 2023</p> <p>Revised Submission 08 March 2023</p> <p>Article Accepted 15 May 2023</p>	<p style="text-align: center;">Abstract</p> <p>The development of information technology has an impact on school principals in carrying out their duties in Indonesia. The aim of this research is to produce an android-based learning leadership assessment model for school principals as an effort to improve teacher performance. The research subjects used were school principals, teachers and school supervisors. Data obtained with the help of focus group discussions, questionnaires, observation, documentation, and interviews. The data analysis technique used is descriptive analysis. The research findings show that the assessment model developed is an application based on android technology. Through this product, the assessment is carried out with the help of an android smartphone. The results of the head of the education office above, the average score shows that the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers as a whole and in terms of aspects has been considered important or very important with an average score of 4.30 or a good category between value > 3.5 - 4.2. the average score shows that the android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers as a whole and in terms of aspects has been assessed as very important with an average score of 4.29. The study findings conclude that the android-based learning leadership assessment model for principals to improve the performance of high school teachers was very necessary and very important to be developed.</p> <p>Keywords: Leadership Assessment, Android-Based, School Principals, Teacher Performance, Indonesian Education System</p>
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Introduction

A good principal's learning leadership will also impact good teacher performance in carrying out learning (Nurdin, 2022; Rosmiwati, 2022; Samsu, 2022; Sukarni et al., 2021). To assess the authentic learning leadership of school principals, it is urgent to conduct assessment development research evaluate it as an effort to improve teacher performance (Herwin et al., 2021; Tjabolo & Herwin, 2020). Various relevant studies show that educational success is also triggered by the role and performance of the teacher. In fact, sometimes this becomes dominant in the field (Cindy et al., 2022; Sartono, et al., 2022; Senen et al., 2021; Wuryandani & Herwin, 2021).

More specifically in learning activities, all studies agree that the teacher is the central determinant (Aqil et al., 2020; Azizah et al., 2020; Misdah, 2021; Rizal & Nurjaya, 2020; Wahyu et al., 2021; Yusfiani, 2020). Another research shows that teacher quality strongly correlates to student achievement from quantitative analysis. The same result which states that teacher performance is an important variable in improving student achievement (Isnawan & Wicaksono, 2020; Suprapti, 2020; Yusfiani, 2020). The school principal must guarantee the implementation of educational services, school resources, ensure that the physical school is adequate for the implementation of learning, has clear and measurable goals. In addition, they must run programs that make all components of the school successful.

Leadership is one of the abilities that must be possessed by school principals in their learning activities (Kullan & Mansor, 2020; Niron et al., 2017; Tiauw & Khoe, 2022). This is very important for teachers because it is one of the essential competencies that influence the success of the learning process in schools (Ahya et al., 2021; Dekawati & Istianah, 2020). Therefore, evaluation of school principals' leadership in learning is information that must be studied and developed further.

However, the gap that is felt in the field is that it is still difficult for educational institutions to measure learning leadership systematically using standard assessment tools. Existing tools in the field are still subjective and difficult to implement. This has an impact on the evaluation of teacher leadership performance to be hampered and not on target.

Another problem encountered in the field was that previous learning leadership assessment tools were still conventional and still had difficulty achieving good and maximum outreach. This is the basis for the urgency of this study namely, to meet the needs in the field in terms of assessing learning leadership for school principals and teachers. In addition, there is integration of information technology in the products developed by using Android technology. This is intended to facilitate the process and answer the challenges of the times. This study aims to identify the need for an android-based learning leadership assessment model for school principals as an effort to improve teacher performance. In addition, this study also aims to test the feasibility of an android-based learning leadership assessment model for school principals as an effort to improve teacher performance.

Literature Review

Various studies have found that principal leadership is a factor that triggers teacher performance. Teachers can produce maximum performance if supported by good principal leadership (Eyal & Roth, 2011). The principal is a leader who is expected to guide all the teachers he leads to perform professionally (Nguyen et al., 2015).

Lestari et al. (2019) found that the principal's leadership is interpreted as a leader who makes efforts to influence the members he leads so that they can carry out performance in accordance with the tasks and goals of the school and are able to create a conducive atmosphere in the work team. If the teacher is in charge of leading student learning activities in class, then the principal is the leader of all leaders in the school. Therefore, this role and position is very important (Sebastian et al., 2017).

Corrigan and Merry (2022) found that the principal cannot be filled by just anyone. They should have expertise in educational organization. A school principal must be able to lead and direct all school members to achieve school goals. The principal is a leader who is expected to be

able to motivate teachers in their performance, able to assist teachers in finding optimal work creativity (Kars & Inandi, 2018).

Amanchukwu et al. (2015) concluded that Effective school principal leadership determines the birth of qualified and professional new teachers. Therefore, the leadership of the principal is very important in a school institution. This is because it is a major factor in the success of schooling.

Sartono et al. (2022) concluded that the teacher plays an important role in the implementation of education in schools. In carrying out these tasks, teachers have an obligation to provide performance in accordance with the demands of the tasks assigned to them. Teacher performance can be defined as a measure of the quantity and quality shown by a teacher in carrying out all of his duties as a teacher Setyowati et al. (2019).

Mesran et al. (2020) found that teacher performance is a result of work achieved by a teacher after carrying out his duties and functions as a teacher at school.

Teacher performance can be seen from various things such as work discipline, mastery of core competencies, work motivation and willingness to develop Rahmayanti et al. (2021). Good teacher performance will appear when he is able to carry out good lesson plans, implement lessons that are consistent with previous plans and are able to evaluate the learning he is doing effectively (Tjabolo & Herwin, 2020). Therefore, teacher performance is one of the main factors of educational success. The performance required of teachers includes internal and external learning with their students.

Novaliendry et al. (2020) researched that the development of information and technology also has an impact on the challenges of implementing education. The educational process must adapt to these changes. Android technology has been applied in smart learning. In carrying out the assessment, Android technology has been tested effectively through mobile assessment Herwin et al. (2022).

Herwin et al. (2021) found that generally every family has at least one smart phone that can be used for their child's education. Android technology has facilitated the learning process in schools from various sectors (Helmiza et al., 2022). This supports that Android technology is no longer a foreign item for the community. In the education sector, various previous studies have supported Android technology to be effective in facilitating the current education process.

Method

The procedure of this study refers to the stages of Borg et al. (2007) with details starting with preliminary information identification research, preparation of plans, initial product framework, initial empirical studies through initial field testing with small scope, product improvement based on initial test reflection, continued wide scope testing, operational product reflection, final operational testing, final model refinement, product deployment studies.

The subjects of this study were teachers and school principals who were spread across the provinces determined by the researchers. Selection of subjects as research samples using a type of purposive sampling. The total sample size used was 38 consisted of school principals and teachers who were previously selected purposively.

Data Collection

The data collection has been done through questionnaire, observation, documents, and focus group discussion. This study was also supported by interviews to quantitatively strengthen the findings previously obtained. Focus group discussions was held in June 2022 and interviews was held in July 2022. Both of these activities were held in the city of Yogyakarta, Indonesia.

Data Analysis

After obtaining the data, an analysis of the data is carried out to achieve the objectives of this study. This is done with descriptive quantitative. This is done to measure several aspects of the quality of the developed assessment model. These aspects are the feasibility of the model, the practicality of the model and the effectiveness of the assessment model that has been developed.

Results

This study proceeds through a Research and Development design. The study process was designed through four study implementation phases which were divided into several steps: (1) the first part was the preliminary phase. In this section the study and collection of information related to the target product that is the focus is the principal's leadership assessment that was carried out so far before this model was developed; (2) the second part is model planning. This section is a continuation of the results of the preliminary study which is a reflection and problem-solving plan that has been found in the first part. Based on the analysis in the first part, an android-based assessment model is planned; (3) the third part is the initial trial. After obtaining the model design in the second part, in this phase trials are carried out on the initial design of the model that has been developed. In this section revision and evaluation of the initial trials are also carried out; the fourth part is operational trials. This activity was carried out through the involvement of ten experts and educational practitioners. This activity utilizes interviews, questionnaires and focus group discussions. To obtain test results from the target sample.

One thing that is also important in this study is the theoretical model of the product being developed. This is done by conducting discussions and considerations with experts who have been selected based on consideration of their expertise in accordance with the substance of the principal leadership assessment model in this study. theoretical decisions were decided based on discussions between researchers and experts in this study. In this step, the model is assessed, analyzed and validated by experts and practitioners who have expertise in the field of education management. The results of theoretical, practical and empirical studies found that the product developed in this study in the form of an assessment of school principal leadership was very urgent by looking at the situations and conditions found in the field.

The product of this study in the form of an Android-based assessment model is carried out while still referring to procedures that have been technically designed beforehand. The preliminary stage is carried out by collecting initial information or preliminary research which is expected to become the basis of information to determine more detailed and accurate field problems and needs. The results of the first stage then become the basis for planning the initial model or product designed based on the leadership assessment model.

The results of the needs analysis study and the feasibility level according to 10 experts showed that: (1) the procedure for developing an android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers by applying procedural development research, (2) learning leadership assessment model Android-based principals as an effort to improve the performance of high school teachers already exist through the Principal Performance Assessment (PPA). However, PPA has not yet adopted the principal's learning leadership performance, so a new model is needed due to development. Then the Principal Leadership Assessment Model was developed as a result of research and development. The following are product models that have been developed.

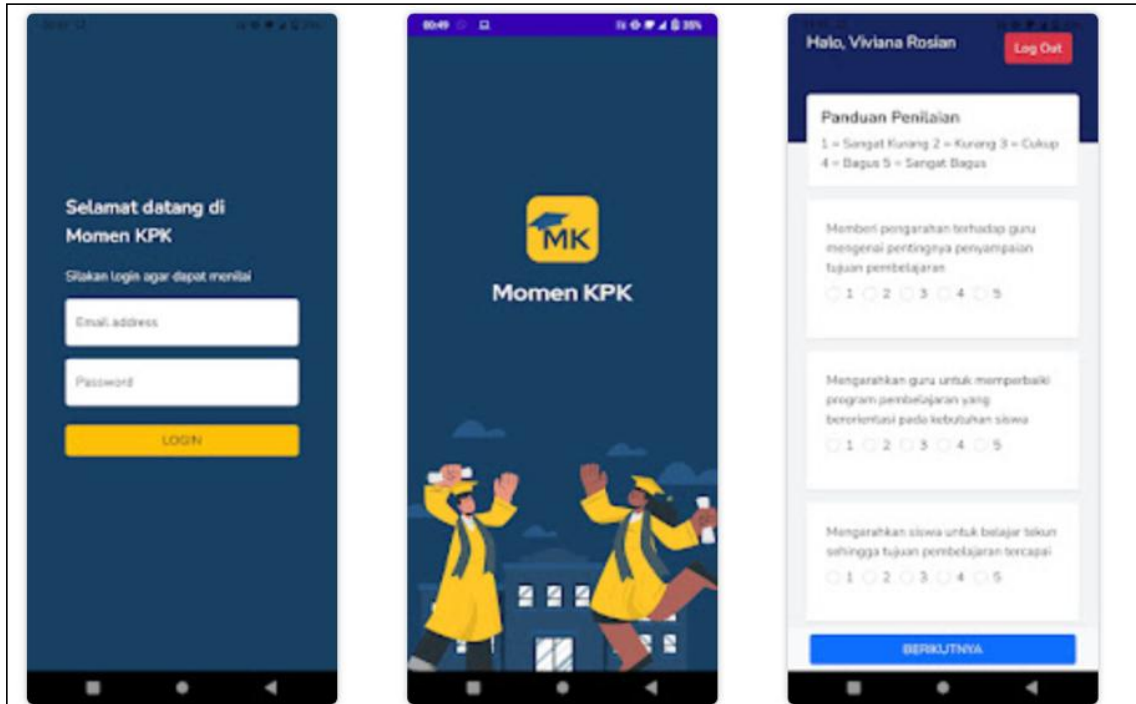


Figure 1. Android-Based Leadership Learning Assessment Product Sample

Figure 1 shows one of the innovative product specifications that have been developed. This product is in the form of an android-based leadership learning assessment which is used to assist school principals and teachers in schools in conducting performance assessments. This assessment model uses an Android-based application with the consideration that Android technology is no longer a foreign item for all school equipment. This has the potential to facilitate the administration of schools to be more efficient. All educational devices in schools have android.

This application is used by assessors and is directly connected to the teacher's account which is the object of performance appraisal. Everything is run in the android application including the indicator items that are measured until the results are directly connected to the storage database for use at a certain time.

The results of the first phase of the research show that (1) an android-based learning leadership assessment model for principals to improve the performance of high school teachers is very necessary. The level of importance according to users, namely the head of education office with a score of 4.30, school supervisors with a score of 4.29, and the Head of Secondary Education Center with a score of 4.28 with an average score of 4.29, the model is very important and necessary, (2) the level of importance of the android-based learning leadership assessment model for principals as an effort to improve performance high school teachers based on the assessment of 10 experts showed an average score of 4.28, which means the model developed is included in the very important category.

The implementation of an assessment of the level of need or interest in the android-based learning leadership assessment model to improve the performance of high school teachers in this needs analysis consisted of 10 people, namely education evaluation and education management experts. The average score of the results of the first stage of the assessment of the feasibility of the android-based learning leadership assessment model for school principals to improve the performance of high school teachers is as follows.

Table 1. The results of the Head of the Education Office's Assessment of the Interests of the Model

No	Aspects	Average Score
1	Setting learning objectives	4.30

No	Aspects	Average Score
2	Principal as a resource person	4.40
3	Creating a conducive learning atmosphere	4.50
4	Communicating the school's vision, and mission to staff	4.20
5	Conditioning staff to achieve school goals	4.20
6	Developing teacher professionalism	4.30
7	Be positive towards teachers, staff, students, and parents	4.10
8	The general importance develops of the model assessment	4.50
	Average Total Score	4.30

Based on the results of the head of the education office above, the average score shows that the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers as a whole and in terms of aspects has been considered important or very important with an average score of 4.30 or a good category between value $> (3.5 - 4.2)$.

In addition to conducting an assessment, the head of the education office was also asked to provide comments and input related to the clarity of the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers. Recommendations or inputs given by the head of the education office on the android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers. This can be observed in the following table 2.

Table 2. The Head of the Education Center Assessment of the Interests

No	Aspects	Average Score
1	Setting learning objectives	4.20
2	Principal as a resource person	4.30
3	Creating a conducive learning atmosphere	4.20
4	Communicating the school's vision, and mission to staff	4.30
5	Conditioning staff to achieve school goals	4.30
6	Developing teacher professionalism	4.20
7	Be positive towards teachers, staff, students, and parents	4.30
8	The general importance develops of the model assessment	4.20
	Average Total Score	4.28

Table 2 informs the assessment of the head of the education center with a score indicating that the android-based learning leadership assessment model for school principals and its items have been considered important based on these findings or if consulted with qualitative criteria, it can be categorized as good. Furthermore, this study also asked for views and assessments from school supervisors. It is important to get another perspective on the model. The following is the result of the assessment.

Table 3 informs the assessment of the school supervisor's assessment above, the average score shows that the android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers as a whole and in terms of aspects has been assessed as very important with an average score of 4.29 or a good category is between scores $> (3.5 - 4.2)$.

Table 3. The School Supervisor's Assessment of the Interests

No	Aspects	Average Score
1	Setting learning objectives	4.30

No	Aspects	Average Score
2	Principal as a resource person	4.40
3	Creating a conducive learning atmosphere	4.50
4	Communicating the school's vision, and mission to staff	4.20
5	Conditioning staff to achieve school goals	4.20
6	Developing teacher professionalism	4.30
7	Be positive towards teachers, staff, students, and parents	4.10
8	The general importance develops of the model assessment	4.50
	Average Total Score	4.30

In addition to conducting assessments, school supervisors were also asked to provide comments regarding the clarity of the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers. The input given by the school supervisor to the android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers is used for improvements based on the point of view of the school supervisor combined with the point of view of the expert, the head of the education office, the head of the education center.

Table 4. Results of Expert Assessment of the Interests of the Model

No	Aspects	Average Score
1	Setting learning objectives	4.30
2	Principal as a resource person	4.30
3	Creating a conducive learning atmosphere	4.20
4	Communicating the school's vision, and mission to staff	4.30
5	Conditioning staff to achieve school goals	4.40
6	Developing teacher professionalism	4.20
7	Be positive towards teachers, staff, students, and parents	4.20
8	The general importance develops of the model assessment	4.30
	Average Total Score	4.28

Based on the results of the assessment of 10 experts in stage 1 above, the average score shows that the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers as a whole and in terms of aspects has been assessed as very important with an average score of 4.28 or the category is very necessary. is between values $> (3.5 - 4.2)$ (Table 4). In addition to conducting assessments, students were also asked to provide comments related to the clarity of the android-based learning leadership assessment model for principals as an effort to improve the performance of high school teachers. The input provided by the expert on the android-based learning leadership assessment model for school principals as an effort to improve the performance of high school teachers is used for improvements based on the student's point of view combined with the point of view of the school supervisor and the education office. These results indicate that the results of the first stage of the importance level assessment.

Discussion

The results of expert validation involving 10 experts show that the average score is 4.28 or the category is very important. All components assessed by the expert are between values $> (3.5 - 4.2)$, which means that the model developed is included in the very important category to be developed. Likewise, the results of the assessment of the level of importance by the head of the education office also have a very important level of importance which is 4.28 or very important category. The

results of the assessment by the head of the education office are between values $>(3.5 - 4.2)$, which means it is very important to use. The results of the assessment of the level of importance by the head of the Ministry of Education and Culture also have a very important level of importance, which is 4.28 or a very important category. The results of the assessment by the head of the education center for education are between values $>(3.5 - 4.2)$ which means it is very important to be developed. Meanwhile, the results of the assessment of the level of importance by the school supervisor also have a very important level of importance, which is 4.29 or very important category. The results of the assessment by the school supervisor are between values $>(3.5 - 4.2)$ which means it is very important to be developed.

The conceptual study of the principal learning leadership assessment model was produced based on various supporting theories. McLeod & Schell for example, have grouped models into four types, namely physical models, narrative models, graphical models, and mathematical models (McLeod & Schell, 2007). The principal's learning leadership is a leadership that involves learning aspects ranging from managing, directing, and empowering teachers as human resources in addition to other resources to achieve learning goals Sari et al. (2020), Wiriawan et al. (2022). Principals as learning leaders in schools are required to continuously improve the effectiveness of their performance so that they can improve the quality of education and achieve school and educational goals (Ansar et al., 2022; Corinta et al., 2022; Said Ashlan & Hambali, 2022). The learning component cannot be separated from the leadership of the school principal. This shows that the implementation of learning, curriculum, adequate learning facilities cannot be separated from the policy of the school principal. All these variables certainly determine the effectiveness of implementing education in schools. Therefore, there is a strong correlation between good principal leadership and good teacher performance in carrying out learning.

The importance of modern 4.0 tools and technology are needed to accelerate the workings of the assessment system to the processing level. An Android-based school principal learning leadership assessment is needed both theoretically and empirically. Android is an open operating system that is aggressively popularized by Google. Many wireless devices in various countries use the Android operating system. Other equipment such as tablets, netbooks, set-top boxes and even cars also adopt the Android operating system (Steele & To, 2010).

Android dynamics in information and communication technology are becoming increasingly important to be applied in the field of education. Even some studies have utilized android in education (Basuk & Ummah, 2020; Ricky, 2015; Syafei, 2013). The factors that cause the popularity of android applications: speed, productivity aspects, design creativity, and flexibility (Istiyanto, 2013). Meanwhile, Android is the platform of the future because it is the first mobile platform that is complete, open and free (Syafaat, 2013).

The existence of Android technology has been proven in previous research to be able to show effectiveness in learning (Novaliendry et al., 2020). Not only in Indonesia, even in various other countries this android technology has been used to facilitate services in the field of education (El-Sofany et al., 2014). Android technology is already familiar with the educational process with the assumption that all people already have smart phone devices that are integrated with Android technology (Helmiza et al., 2022). Several previous studies have corroborated the findings of this study which chose Android technology as a medium to facilitate the principal's task of evaluating teacher performance.

The existence of this leadership assessment model based on Android technology is very relevant to today's needs and developments. Particularly in the education sector, various sectors have reported that the integration of technology in the delivery of education is urgently needed (Astuti et al., 2022; Herwin, et al., 2022; Rahayu et al., 2022). This technology integration is not only needed in technical aspects but also in various specific educational content (Haryanti et al., 2021; Herwin, Nurhayati, et al., 2022; Ilyas et al., 2022; Maulani et al., 2021). This further reinforces that the products developed in this study are really needed in the practice of providing education, especially in Indonesia.

Conclusion

The android-based learning leadership assessment model for principals to improve the performance of high school teachers was very necessary and very important to be developed. The input provided by the expert on the android-based learning leadership assessment model for school principals was an effort to improve the performance of high school teachers and will be used for improvements based on the student's point of view combined with the point of view of the school supervisor and the education office. . The input given by the school supervisor to the android-based learning leadership assessment model for school principals was also an effort to improve the performance of high school teachers and will be used for improvements based on the point of view of the school supervisor combined with the point of view of the expert, the head of the education office and head of the education center.

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