Academic Supervision Model Based on Edmodo Application

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A R T I C L E   I N F O

A B S T R A K

Pandemi Covid 19 memberikan dampak pada pelaksanaan supervisi akademik. Penelitian ini bertujuan untuk mengembangkan model supervisi akademik berbasis online. Jenis penelitian yang dilakukan merupakan penelitian dan pengembangan (Research and Development). Subjek penelitian adalah 4 (empat) kepala sekolah dan 17 (tujuh belas) guru sekolah dasar. Teknik pengumpulan data yang digunakan adalah wawancara, studi dokumentasi, dan angket. Data kualitatif dianalisis dengan model Miles and Huberman. Data kuantitatif didapatkan melalui angket. Data kuantitatif dinalisis dengan uji validasi dan uji coba terbatas menggunakan teknik deskriptif kuantitatif dengan rerata dan prosentase. Hasil penelitian menunjukan bahwa model supervisi akademik MARIA (M - Mapping, A - Arranging the solution, R – Running the observation, I – Identifying the data, A – Acting the follow up) berbasis aplikasi Edmodo berdampak pada peningkatan kinerja Kepala Sekolah dan guru di sekolah dasar, dengan hasil uji coba produk terbatas terhadap kepala sekolah berada pada tingkat 88% dan guru pada tingkat 86% dengan kategori sangat valid dan layak untuk digunakan. Implikasi penelitian ini adalah mempermudah pelaksanaan supervisi berbasis teknologi informasi, meningkatkan kinerja kepala sekolah, meningkatkan kompetensi guru dalam melaksanakan pembelajaran, dan mengurangi ketegangan guru ketika disupervisi.

A B S T R A C T

The Covid 19 pandemic has had an impact on the implementation of academic supervision. This study aims to develop an online-based academic supervision model. The type of research conducted is research and development (Research and Development). The research subjects were 4 (four) school principals and 17 (seventeen) elementary school teachers. Data collection techniques used were interviews, documentation studies, and questionnaires. Qualitative data were analyzed using the Miles and Huberman model. Quantitative data obtained through a questionnaire. Quantitative data were analyzed by validation tests and limited trials using quantitative descriptive techniques with mean and percentage. The results showed that the MARIA academic supervision model (M - Mapping, A - Arranging the solution, R - Running the observation, I - Identifying the data, A – Acting the follow up) based on the Edmodo application has an impact on improving the performance of school principals and techers in elemantary schools, with the result of limited product trials on school principals at the 88% level and techers at the 86% level with a very valid and feasible category to use. The implications of this research were facilitating the implementation of information technology-based supervision, improving the performance of school principals, increasing teacher competence in carrying out learning, and reducing teacher stress when supervised.

1. INTRODUCTION

One that influences the improvement of the quality of education is the implementation of management functions in a systematic and comprehensive manner. The application of management functions encourages schools to be managed in a modern and professional manner (Dewi, 2020; Mauliate et al., 2019; Yanto, 2020). Management functions consists of Planning, Organizing, Actuating and Controlling/Supervision (Cortellazzo et al., 2019; Kin et al., 2018; Subandi, 2018; Wangid et al., 2020). One of the management functions that controls the improvement of the quality of education is supervision. Controlling in schools are carried out in the form of supervision (Abadi et al., 2019; Leniwati & Arafat, 2017; Siswanto & Hidayati, 2020). Academic supervision is an effort to help the teachers to develop their ability to achieve learning goals and help to develop their professional skills (Hasanah & Kristiawan, 2019; Leniwati & Arafat, 2017). Academic supervision is a supervision that carried out to be able to improve the situation related to teachers and teaching materials so that educational goals are achieved (Anggal & Lugan, 2022; Nasution et al., 2021). Therefore, academic supervision is an attempt to assist teachers to improve teaching quality and improve teaching and learning situations.

Academic supervision aims to help the teachers to develop their abilities to achieve learning goals through increasing teaching knowledge and skills, increasing teacher commitment and motivation (Alwis et al., 2020; Fendi, Hanafi, Monia, et al., 2020; Saihu, 2020). With academic supervision, it is expected that the ability

and work motivation of teachers in learning will increase (Dewi & Dwikurnaningsih, 2022; Suriansyah & Effendi, 2019). Given the importance of academic supervision in educational units, the government made a stipulation related to the Supervision of Government Regulation no. 19 of 2005 which states that in order to achieve an effective and efficient learning process, each educational unit need to plans the learning process, implements the learning process, assesses learning outcomes, and monitors the learning process. In supervising, the role of the principal is very important to improve teacher performance (Kartini et al., 2020; Kozachuk & Conley, 2020; Suarlin & Eljuang, 2021; Yousaf et al., 2018).

However, based on preliminary studies conducted by researchers, the implementation of academic supervision experienced various obstacles that could affect the improvement of the quality of teacher performance (Elfidawati, 2020; Hasanah & Kristiawan, 2019; Kartini et al., 2020b). These constraints are reflected in the high workload of school principals, an unequal ratio of principals and teachers, limited time, limited face-to-face activities, and changing instruments (Leniwati & Arafat, 2017)(Dwikurnaningsih, 2020). The challenges of implementing academic supervision are increasing with the existence of a learning policy from home due to the spread of Covid 19. The government issued Surat Edaran Nomor 15 Tahun 2020 about Guidelines for Organizing Learning from Home which requires students to study at home even for some teachers are required to do work at home in order to break the chain of distribution of Covid-19 (Nainggolan & Manalu, 2021; Nurhayati et al., 2021; Suriadi et al., 2021). The implementation of academic supervision is experiencing problems due to the unavailability of online-based academic supervision format products that can be accessed anytime and anywhere by school principals and teachers.

The results of the preliminary studies are supported by the results of previous studies. The result revealed that there were obstacles to the implementation of academic supervision such as there were sudden external activities that require postponement of scheduled supervision, teacher absence on scheduled class visits, difficulty finding time to provide feedback (Fahmi et al., 2018; Sukarmen, 2018; Zulfikar et al., 2017). Then research shows the unavailability of standard applications from the government to carry out academic supervision (Aji, 2020; Fendi, Hanafi, M., et al., 2020; Onyema et al., 2020).

The discrepancy that occurs between theoretical studies and preliminary studies indicates that there are problems in the implementation of academic supervision in schools. The implementation of academic supervision needs a new breakthrough by developing an online-based academic supervision model through the Edmodo application. The Edmodo application was chosen because it is more effective and interactive (Amalia & Brata, 2018; Cahyawati & Gunarto, 2020; Fatimah & Santiana, 2017). This is in line with the research showed in their research that Edmodo is an effective application to use because there is interaction between teachers, friends, and can be done asynchronously and synchronously (Farman & Chairuddin, 2020; Haruna et al., 2021; Hatip et al., 2019; Miraza et al., 2018; Putri et al., 2021; Sudewa et al., 2021).

This online-based academic supervision model is expected to be able to answer new challenges in improving the quality of school principals and teachers in the future. The use of technology can provide easy access and as a means of communication such as online discussions and provision of information (Budiyono, 2020; Kasmawati, 2020; Munje & Jita, 2020; Parra, 2021). Principals and supervised teachers can also supervise without having to face each other directly which can help reduce the tension that exists on teachers when they are supervised. Online supervision has proven effective in improving teacher performance to improve school quality during this pandemic (Fendi, Hanafi, M., et al., 2020; Kasmawati, 2020).

The novelty in this research is the development of an information technology-based academic supervision model. Therefore this study aims to develop an online-based supervision model. Online-based academic supervision model utilizes learning management system (LMS) technology, namely the Edmodo application. Results of research, it is hoped that it can optimize the implementation of academic supervision carried out by school principals, be more flexible with or without face-to-face meetings, as well as increase teacher competence in the teaching and learning process and reduce teacher tension when supervised.

2. METHOD

This study uses research and development (R and D) methods based on Sugiyono's (2017) steps which include potentials and problems, gathering information, product design, design validation, design improvement, product trials and product revisions. The potential and problem stage was identifying problems that arose regarding the irregularities that occurred. The product design stage was making a hypothetical new product and a chart of information technology-based academic supervision model. The design validation stage was design validation by supervising experts and information technology experts and product revision namely product improvement based on input from experts. The limited trial phase was testing the effectiveness of the product on school principals and teachers and the product revision was improving the product as the final model from the results of the limited trial. The research subjects were 4 (four) school principals and 17 (seventeen) elementary school teachers. Data collection techniques in the preliminary study used interviews and documentation studies,

while for the validation and testing of the model using a questionnaire. The research questionnaire instrument grid in table 1.

Table 1. Grid of Academic Supervision Instruments

No.	Assessment Aspects
a. Background	
1.	Background explanation
2.	Goal description
3.	Target explanation
b. Theory Accuracy	
1.	Model compatibility with theory.
2.	The theory used is up to date.
3.	The theoretical sources used are accurate
c. Model Visualization	
1.	The Model Design describes the steps
2.	The Model Design is easy to understand.
3.	Easy to read visualization.
4.	Model according to theory
d. Model Description	
1.	Easy to understand language
2.	Simple language
3.	The model is arranged systematically and logically.
4.	Model is clearly outlined.
5.	Presentation of the model is right on target and objectives.
e. The Use of the Academic Supervision Model	
1.	The benefits of models
2.	According to the needs
3.	Model flexibility.

(Arikunto & Yuliana, 2012)

Table 2. Grid of Information Technology Instruments

No.	Assessment Aspects
a. Appearance	
1.	Interesting
2.	Menu view
3.	Systematic
4.	Simple display
b. Access	
1.	Login Process
2.	Notification menu
3.	Group creation
c. Interaction	
1.	Messaging facility.
2.	Interactive
3.	Sharing facility
4.	Library facility
5.	Folders facility
6.	Polling menu
7.	Notification facility.
d. Control	
1.	Share video, data, information menu
2.	Assignment menu

(Arikunto & Yuliana, 2012)

Instrument validation was carried out using the expert judgment method, namely by using expert opinion to assess the instrument based on certain criteria. The results of the instrument validation have been declared valid and can be used. The product validation was carried out by four experts consisting of two

supervisory experts and two experts for the ease of use of information technology. Limited trial conducted by four elementary school principals in one Sudirman Salatiga cluster consisting of two public and two private elementary schools and seventeen teachers from the four schools. The sampling selection technique is purposive sampling, namely schools that have IT skills so they can apply Edmodo. Qualitative data were analyzed using the Miles and Huberman model. Quantitative data were analyzed by validation tests and limited trials using quantitative descriptive techniques with mean and percentage.

3. RESULT AND DISCUSSION

Result

The result of the development of this research was the Edmodo-Based Academic Supervision Model which was equipped with a Guidebook for using Edmodo for school principals and a Guidebook for using Edmodo for Teachers. The obstacles faced by school principals in carrying out academic supervision in educational units were the limited time that the principals have to be able to supervise all teachers in the school, documentation that had not been archived properly, difficulty in finding time via face to face to provide feedback so that the supervision did not continuing that it did not increase the teacher competence, and a decrease in teacher motivation due to changing schedules and observations in the classroom that made the teacher felt nervous which caused the learning process became less smooth. Therefore, the researchers developed an academic supervision model based on Edmodo that could help school principals carry out academic supervision both synchronously and asynchronously so that the implementation can be carried out more flexibly.

Academic supervision model was developed based on the theory of supervision steps namely starting with preliminary meetings, planning by teachers and supervisors, carrying out observations, analyzing data, providing feedback by using the help of Edmodo application as a means of implementing academic supervision in schools (Arikunto & Yuliana, 2012). The use of the Edmodo application as a means of implementing academic supervision in schools. The academic supervision model developed was named MARIA academic supervision which is an acronym for M – Mapping, A – Arranging the solution, R – Running the observation, I – Identifying the data, A – Acting the follow up.

The advantage of this model is the combination of two different techniques in the implementation of academic supervision that can help teachers to improve their professional abilities in their duties as teachers. The technique used is a group technique, namely exchanging experiences between teachers and individual techniques, namely observation. The MARIA academic supervision model combined with the help of Edmodo application technology in its implementation can overcome problems that arise such as time constraints faced, manual documentation that has not been archived properly, difficulties in finding time can be resolved properly. Apart from that, the implementation of MARIA academic supervision based on the Edmodo application is carried out in an integrated manner so that it is very helpful in monitoring the progress of the supervised teachers. When viewed schematically, the development of the MARIA academic supervision model in Figure 1.

M – Mapping is the first step taken by the principal by identifying problems that may arise in the learning process such as making the lesson plans, use of media, assessment instruments, time allocation, class management, utilization of teaching material sources, use of learning technology and others. In this step, a teacher group is created on the Edmodo application by the principal which will be used to exchange experiences and the process of implementing further supervision. Making groups is adjusted to the similarity of conditions in the students being taught. The next step is for the principal to determine the priority of the problems to be solved as soon as possible. In doing so, the polling feature on the Edmodo application can be used to be able to conduct a survey on a group of teachers about situations or problems that must be solved immediately. After the priority of the problem has been determined, the next step is to determine a meeting schedule for discussions to exchange experiences through face-to-face or Gmeet/Zoom in each group.

A- Arranging the solution is the second stage of the MARIA academic supervision model. In this stage, the principal holds a meeting to exchange experiences and discuss problems that must be overcome. This meeting can be held face to face or online. When this experience exchange meeting is held online, the principal sends a link for Gmeet or Zoom by using the share discussion feature and add on the add link button. The use of G-Meet and Zoom, where a link is given to Edmodo, makes it easier for school principals and teachers to be able to arrange meetings anywhere and anytime at a predetermined time together without having to have trouble being in the same place. In this stage, The principal will be a facilitator to find solutions to problems through the experiences of other teachers who may have experienced and found solutions. The next step is taken after finding the right solution, the principal will discuss the schedule for class observations and provide a deadline for administrative submission like lesson plan, semester program, yearly program, syllabus, the use of media, attendance list, grade book, etc. In this administrative submission, the principal can take advantage of the facilities at Edmodo, namely create assignments and provide due dates so that teachers can be more disciplined

in collecting administrative completeness. And in addition, with the library feature, academic supervision archiving can be well-documented in one application, namely Edmodo.

R – Running the observation is the third stage of the MARIA academic supervision model. At this stage, the principal will begin to check the completeness of the administration and any deficiencies that may be found. Administrative that need to be returned can use the private message feature and return files with the input that has been given to the attach file icon. In a private message, the principal will also explain about the assessment instruments that will be carried out on class observations so that teachers can prepare the things needed. By using the chat feature, the teacher can conduct discussions using chat in Edmodo anytime and anywhere. The next step is to carry out class observations according to the agreed schedule. Class observations can be carried out either synchronously or asynchronously. Synchronous observations can be made by way of the principal entering the teacher's class to be supervised or the principal entering the class held via Gmeet or Zoom. While asynchronously observations can be done using learning recordings sent via the attach file feature on the Edmodo application. In this way, the tension of the teacher can be reduced and will be a solution to the busy principal's schedule so that there is no need to change the schedule which will reduce the motivation of the teacher to be supervised.

I – Identifying the data is the next step where analysis is carried out on the data that has been taken from the observations. The analysis is carried out not only by assessing based on the assessment instrument but also by looking at the strengths that must be maintained and the weaknesses of teachers that need to be improved in order to increase teacher competence. After the data has been analyzed, the principal sets a schedule for providing feedback. Principals can provide feedback face-to-face or online via Gmeet or Zoom. The principal is expected to be able to provide analysis results and feedback without having face-to-face meetings. Feedback can be done using private chat or Zoom or Gmeet anywhere and anytime so that the principal and teacher can overcome busyness problems.

A – Acting the follow up is the final step in MARIA's academic supervision. The principal determines what corrective steps are most appropriate to take based on the results of previous observations. One alternative step that can be taken is to hold further supervision of the input that has been given and the teacher is expected to be able to improve and apply it in classroom learning. This advanced supervision can be carried out with the help of Edmodo and monitoring teachers regularly. Another step that can be taken is to have IHT (In House Training) by utilizing groups that have been made before and teachers who have the ability will provide assistance to other teachers in the group, so it can be done without having to spend a lot of time. Another product that supports the use of Edmodo is the Guide Book for school principals and teachers. This book also describes the steps for using Edmodo accompanied by pictures to be able to apply the features used in the MARIA academic supervision model.

Features used such as creating an account as a teacher account; edit the profile by providing a photo or description of the school; set notifications and privacy which is useful for knowing when there is a post notification or sending administrative complete files received from teachers so that the principal can immediately check; creating classes that are useful for carrying out MARIA's academic supervision; filling in the programmed supervision scheduling calendar as a reminder for teachers to be able to prepare well in advance; sending post discussions and Zoom and G-Meet links that are useful for online experience sharing meetings and providing online feedback; create a poll to be able to map the problems that arise; make administrative complete assignments as a place for collecting files for teachers where the principal can upload them directly; use of the library for file storage from the teacher; as well as sending private chats to hold talks with teachers in order to notify the implementation of observations, correct administrative completeness, provide periodic feedback and supervision as a follow-up to supervision results. The next product is the Edmodo Guidebook for Teachers. This book also explains the steps for using Edmodo accompanied by pictures in the implementation of academic supervision aimed for teachers.

The features used are adapted to MARIA's academic supervision model, namely creating an account as a student; profile editing to be able to upload photos and teacher profile information as a teacher; an explanation of the menu bars such as home, classes, calendar, backpack (to store files), discover (to be able to get free teaching resources from the teacher community), messages, notifications; notification settings with options via email or cellphone; delivery of post discussion to answer the principal or give a statement in the group; giving choices in polls when the principal gives polls and teachers are expected to provide answers according to the conditions that occur; uploading assignments, namely administrative completeness required for the implementation of academic supervision.
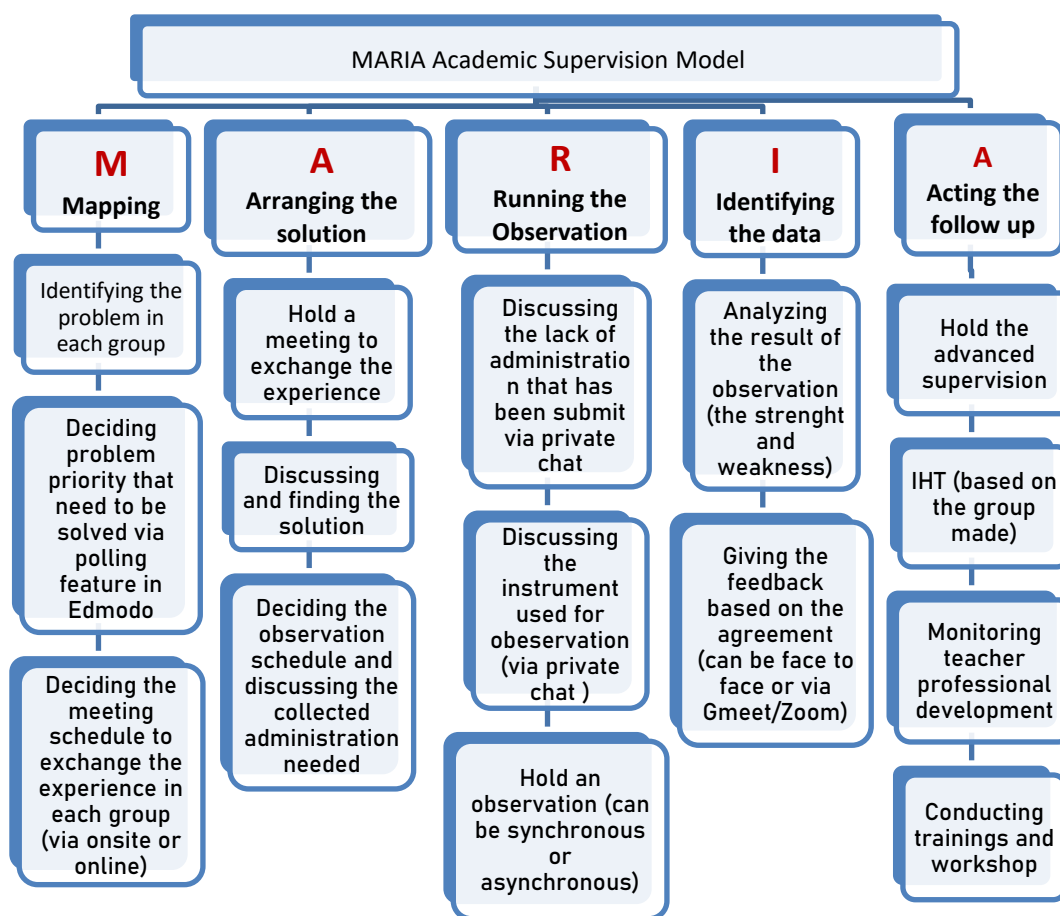
Figure 1. MARIA Academic Supervision Model

After the initial product of MARIA's academic supervision based on the Edmodo application was developed, an assessment was then carried out by experts. This initial product assessment was carried out by assessing the aspects of supervision and ease of use of IT, namely the Edmodo application. In testing the supervision aspect, a questionnaire was distributed consisting of 18 (eighteen) question items consisting of 5 (five) aspects. A summary of the results of the validation test assessment carried out by supervising experts in Figure 2.
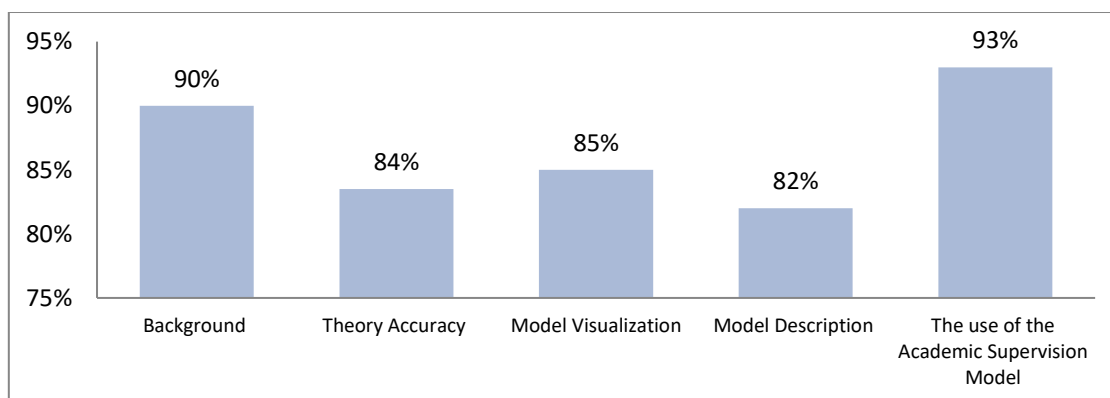

Figure 2. Supervision Expert Validation Test Results

Based on graph 1 of the data validation results carried out by the two experts, it was found that the average value of the validation test carried out by the supervising experts showed 87%. Based on the results of these data, the score interpretation of the MARIA academic supervision model above is very valid, which means

that the MARIA academic supervision model can be continued to the next step, namely limited trials. Information technology expert validation test results in Figure 3.
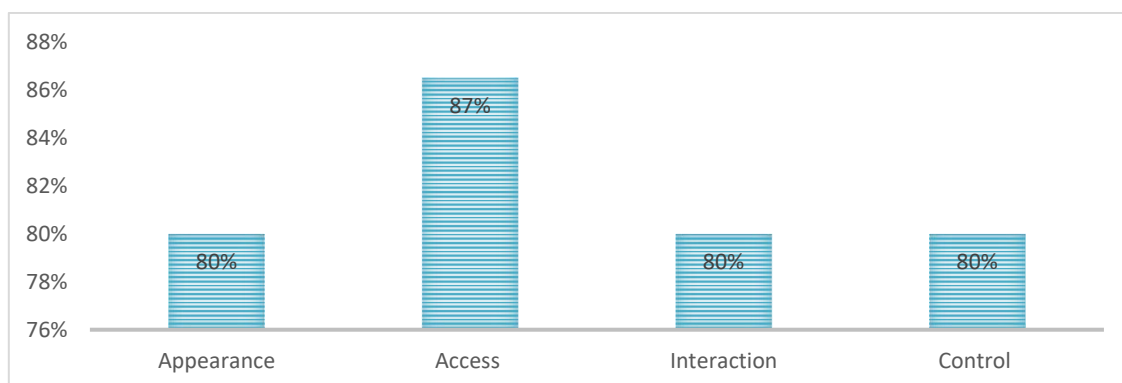

Figure 3. Information Technology Expert Validation Test Results

The validation test results from the ease of use of IT conducted by the validators showed a value of 82% where this value was included in the very valid category. It can be seen from the results of the assessment and the score interpretation criteria that the product made was valid and the next step can be taken, namely a limited trial at designated schools.

The next stage in this research was to conduct a limited trial to the schools that have been selected, namely schools that were in the same cluster, namely the Sudirman Cluster. Researchers chose 2 (two) public schools and 2 (two) private schools in order to get more accurate data. In testing this product, researchers gave open and closed questionnaires to 4 (four) school principals. The closed questionnaire contains 27 question items consisting of 8 aspects. The results of limited trials on school principals by calculating the overall average results in Table 3.

Table 3 Average Result of the Trial by the Principal

No.	Assessment Aspects	Score
1.	Appearance	83%
2.	Access	94%
3.	Interaction	90%
4.	Control	80%
5.	Academic Supervision Model Design	92%
6.	Model Description	93%
7.	Edmodo Usage Guidebook Design	86%
8.	The Use of the Academic Supervision Model	89%
Overall Average		**88%**

The average score obtained was then categorized. The score results showed the number 88% where this score was included in the Very Valid category, which means it is suitable for use by practitioners, especially school principals. Limited trials were also conducted by teachers in selected schools. The number of teachers selected varies according to the number of teachers and classes in each school. The total number of teachers who conducted the trial was seventeen teachers. The questionnaire given to the teachers was an open and closed questionnaire. The closed questionnaire consists of six assessment aspects which were divided into twenty question items. The average results of the limited trials conducted by the teachers in Table 4.

Table 4. Teacher Test Average Results

No.	Assessment Aspects	Score
1.	Appearance	84%
2.	Access	89%
3.	Interaction	85%
4.	Control	85%
5.	Edmodo Usage Guidebook Design	87%
6.	The Use of the Academic Supervision Model	88%
	Overall Average	**86%**

The score obtained from the test results of the MARIA academic supervision model product based on the Edmodo application conducted by the teacher was 86% and was included in the Very Valid category. Based on the score results and score interpretation criteria, the product of the MARIA academic supervision model based on the Edmodo application is feasible to use.

Discussion

The results of the study showed that the MARIA academic supervision model based on the Edmodo application was based on the results of validation, limited trials were considered effective and maximal in carrying out supervision. This has similarities with other research that academic supervision can improve teacher performance in teaching students (Fellang et al., 2021; Fendi, Hanafi, Monia, et al., 2020; Suriansyah & Effendi, 2019; Zulfakar et al., 2020). Then the research results found the same thing that academic supervision is very important to develop the professional competence of teachers as educators (Agustina & Kristiawan, 2020; Pambudi & Gunawan, 2020; Saleh et al., 2021). Therefore, supervision activities must be carried out in realizing quality education.

The results of the study found that there were obstacles in the implementation of supervision. The constraints were reflected in the time adjustment between the principal and the teacher to be supervised, the principal had an invitation or a sudden meeting which results in the supervision schedule having to be changed, the ratio between the number of teachers and the principal who will supervise was unbalanced, causing a very heavy workload for school principals, as well as documentation that was not well archived. These findings have similarities with research which revealed the emergence of problems in the implementation of supervision in schools (Dewi & Dwikurnaningsih, 2022; Messi et al., 2018; Muslimin, 2020; Noor et al., 2020).

The results of the research at the validation stage were in the very valid category and were suitable for limited trials. This showed that the Edmodo application-based supervision product is effective in overcoming problems. This has similarities with research that the implementation of academic supervision aims to increase teacher readiness in utilizing information and technology (Istiningsih et al., 2020; Mustabsyiroh et al., 2021). This is reinforced by research that the use of technology is an opportunity during the current pandemic (Juanda et al., 2021; Mustabsyiroh et al., 2021; Parra, 2021; Sudarsana et al., 2019). Likewise research utilized Google Form as a means for implementing Academic Supervision, especially during a pandemic (Kasmawati,2020).

The research findings showed that the results of limited trials for teachers and principals showed maximum results in very valid categories. The use of the Edmodo application in academic supervision made it easier for principals and teachers to share experiences and observation techniques. The experience exchange technique focuses on teachers helping other teachers so that they can support each other. These results are strengthened by research which stated that the implementation of supervision by utilizing friends and their experiences can run effectively to improve teacher competence (Dewi, 2020; Noerhidayah et al., 2019; Sahlan, 2019; Winaryati, 2018). This is also in line with the findings that colleagues have a positive influence on teacher performance. Different thoughts and perspectives in questioning something produce high self-efficacy (Turner et al., 2017).

Edmodo was an alternative technology used by researchers to overcome problems that arise during the implementation of a pandemic (Anjelina & Mawardi, 2021; Handayani et al., 2021; Putri et al., 2021). The research findings showed that Edmodo can be accessed free of charge so that it was easy to apply to every educational unit. This is reinforced by research showed the effectiveness of the Edmodo application so that interactions can be carried out easily (Sumardi & Muamaroh, 2020; Utami et al., 2021). Applications could also overcome problems that arise with the features that have been provided such as organized and unlimited storage, easy group creation, easy communication between principals and teachers (Fitriani, 2020). As well, other research showed that there was an increase in collaborative performance with the use of Edmodo (Alqahtani, 2019; Sefriani et al., 2021).

The implication of the research results are to contribute knowledge about information technology-based academic supervision model. The Edmodo-based supervision model makes it easier to carry out supervision during the pandemic and after the pandemic is over, improves the performance of school principals, increases teacher competence in carrying out learning, and reduces teacher stress when supervised. In this study, there were limitations, namely that the implementation of this academic supervision could only be carried out in a place with a good signal network, and using electronic devices such as cellphones, laptops or computers. Moreover, it was highly expected that teachers can master IT skills.

Based on the results of the research and discussion, it is suggested that schools should be able to facilitate IT facilities and infrastructure so that they can improve the IT skills of the principal and each teacher. For school principals to be able to use the MARIA academic supervision model as a tool to carry out academic supervision in a more flexible manner so that it can be carried out as a whole for teachers and according to a predetermined program. For teachers to be able to always add IT skills so that the implementation of academic supervision can be carried out more effectively. In addition, for the researchers are suggested to conduct field

trials of the MARIA Academic Supervision product based on the Edmodo application so that its effectiveness can be known on a wider scale because this research was only carried out at the limited trial stage in 4 (four) elementary schools in Salatiga.

4. CONCLUSION

This research has produced a MARIA academic supervision model that has been proven valid and feasible to be tested by practitioners on a limited basis. This model can to improve the performance of school principals and teachers. This showed that MARIA academic supervision based on the Edmodo application is feasible to be implemented and widely used.

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