

## Web-based Application-Assisted Academic Supervision Model in Developing PAI Teacher Competence

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### ABSTRACT

The purpose of this study was to describe the need for the development of academic supervision assisted by web-based applications and to develop the design of academic supervision models assisted by web-based applications in fostering teacher competence by PAI Supervisors. Teachers' competence in implementing learning at school in planning, implementing and evaluating learning is largely determined by the coaching they receive. This research uses a type of development research (R&D) that refers to the model developed by Borg and Gall consisting of ten steps, incorporated in four main stages, namely the preliminary stage, development, field test and dissemination stages. Data were collected using questionnaires and interviews, then processed with a descriptive statistical approach.

The results showed that academic supervision in the field is still less than optimal because it is necessary to develop a website-based supervisor academic supervision model designed according to the needs of the field. The website-based academic supervision model is designed using an application called e-sisaga. The development of e-sisaga was designed using Google Workspace. The product design designed and produced at the development stage is in the form of three products, namely including the design of the academic supervision model book, the design of the website-based e-sisaga application and the design of the e-sisaga user manual. The results of validation from experts show that these three products are very valid from the aspects of content, construction, design and language. The trial results show that the application is very feasible to use. Likewise, the practicality and effectiveness tests also show that the e-Sisaga model is very practical and effective for supervisors and teachers to use in academic supervision activities.

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## INTRODUCTION

According to Regulation of the Minister of Religious Affairs No. 2/2012, Islamic Religious Education supervisors are supervisors of public school Islamic Religious Education teachers at the levels of kindergarten, elementary school, junior high school, high school, and/or vocational school.

Islamic Religious Education Supervisors have competencies that include personality competence, academic supervision competence, educational assessment competence, research and development competence, and social competence. (Dunan, 2017) According to Permendiknas No. 12/2007 in Santosa HS, one of the competencies of school supervisors is academic supervision. (Santosa, 2010) To be able to carry out these tasks, PAI supervisors in schools must have qualifications and competencies in the mastery of science and other competencies that support their main duties and functions, as well as their duties and authorities. This is important for supervisors in an effort to monitor, evaluate and guide Islamic education teachers to improve their professionalism. (Syarnubi et al., n.d., 2019)

Academic supervision is one of the functions and competencies of PAI supervisors in carrying out the tasks of coaching, monitoring, assessing, guiding, mentoring and professional training of teachers. (Ismed, 2018) According to Azyumardi Azra, Islamic education is an effort and a way of working that has at least three characters. (Fitriyan et al., 2020.) To improve the quality of the learning and teaching process, a PAI supervisor must attend training and then conduct continuous assessment so that the desired goal of improving the quality of student learning outcomes in school can be achieved. (Harto, 2021) Academic supervision is one way to achieve these goals with the right supervision methods and methods according to the needs and abilities of teachers. (Kemendikbud, 2018) Education, which is inseparable from technological advances, is an entity in life, so that building education in accordance with the industrial revolution 4.0 is a demand for education bearers and policy makers. All elements of education in the era of the industrial revolution 4.0 are required to use digital media in their activities. The existence of technology in the world of education will help realize the national goals of the Indonesian nation. (Samiya Ma' Ayis Mohammad Syahidul Haq, 2022)

The use of information and communication technology is absolutely necessary in the era of the industrial revolution 4.0. In this era the industry uses virtual accounts (cyberspace) that connect humans, machines and data directly and quickly via the internet replacing business behavior that originally used human hands manually. Education is also inseparable from the utilization of information and communication technology (ICT) in the life of era 4.0. Educational actors and policy makers are also required to be able to develop education in accordance with the industrial revolution 4.0. The theme of education 4.0 is the answer to the development of industry 4.0. In the era of education 4.0, all elements in the world of education when doing activities. Rapid developments have been seen in the education process in schools in the areas of curriculum, learning methodology, equipment and evaluation. In addition, there have also been changes in the fields of educational administration, organization, personnel (HR), and educational supervision. (Syarnubi, 2019) Holistically, it can be said that the changes that occur are reforms in the education system that involve all aspects or components that exist. (Sarno Sarno, 2020) By using digital technology and information, interaction and communication between individuals and groups of people can take place online without the need to meet physically. Even with digital technology, information can be transferred faster and more easily. (Munir, 2017) Among the forms of implementing academic supervision using digital technology is coaching and training teachers to improve competencies. The development of teacher qualifications by supervisors is very important to improve teacher competence in order to improve the quality and quality of teaching. (Uno, 2009) Moreover, during the Covid 19 pandemic, teachers and students are accustomed to learning online using various internet applications. And of course this is very conducive to the implementation of e-supervision by supervisors.

The web-based e-supervision-assisted academic supervision model was developed to overcome several challenges in implementing academic supervision such as the large number of mentored teachers and distant geographical locations. Web-based e-supervision offers several supervision implementations using web-based internet technology and builds communication and virtual communities between supervisors and mentored teachers. (Valeri L, 29012)

At this time the development of electronic-based academic supervision is very important to do because in its utilization there are very large opportunities that support the success in

implementing it (Asmarani et al., 2022), among others: 1) PAI teachers and supervisors in SMA/SMK in West Sumatra Province mostly use android phones, identical to the Internet; 2) PAI teachers and supervisors mostly have social media accounts such as WhatsApp, Facebook, Instagram, Twitter and others; 3) The use of IT for teachers and supervisors is a must in its utilization, especially during the pandemic yesterday, all teachers and supervisors are required to be able to utilize existing technology in supporting academic activities, such as zoom meetings, google meet, as well as for learning such as google classroom, google form, etc. (Astini, Sari, 2020) 4) the availability of internet networks in West Sumatra Province is quite good and even 4G networks have entered rural areas, so that the use of the internet for teacher competency development activities in several units and educational institutions in West Sumatra is common.

Various similar studies have also been conducted including by Herry Sanoto (Sanoto et al., 2022), He argued that the academic supervision process using an online-based academic supervision system helps school supervisors in carrying out supervision activities. The online-based academic supervision system is able to reach teachers with distant geographical locations and does not have to be carried out face-to-face, but can be done online. Sanoto's research is in line with research conducted by Desak Ketut Sitaasih. (Sitaasih, 2020) that the application of academic supervision can improve teacher competence in the learning process at SD Negeri 1 Kalibukbuk in semester II of the 2019/2020 academic year. This can be seen from the increase in teacher competence in the learning process, namely in the pre-cycle the level of teacher competence in the learning process was 65.19% which was classified as sufficient, in cycle II to 68.06% which was classified as sufficient, and in cycle II to 78.06% which was classified as good. Furthermore, research conducted by Machrus Salim (Machrus Salim, 2020). That there is an effectiveness of e learning application as academic supervision to increase the motivation of madrasah work at MTs Hasyim Asy'ari with MAN Kota Batu. Researchers consider it necessary to conduct research and development by developing a model of PAI teacher coaching through electronic-based academic supervision. It is expected that in the current era the development of online supervision can help the academic supervision process, especially if there is blended supervision, then online and offline cooperation can be done well if done professionally, objectively, accountably and transparently.

## RESEARCH METHODS

The research method used in this study is the type of research and development or better known as Research and Development (R&D), which is a type of research used to produce certain products and test the effectiveness of these products. (Sugiyono, 2017). Research and Development is a research method used to produce certain products, and test the effectiveness of these products. (Hanafi, 2017) In other words, research and development is a process or steps to develop a new product or improve existing products. Research and development products in the field of education can be in the form of models, media, teaching aids, modules, evaluation tools, and/or learning devices. Balitbang (Research and Development Agency) of the Ministry of Education and Culture explains that the research and development method contains three main components, namely main components, namely: (1) development model, (2) development procedures, and (3) product trials. (Arifin, 2012).

The research and development (R&D) method has ten stages of research, namely research and information gathering, planning, developing the initial form of the product, initial testing, revising the product, main field testing, revising the operational product, operational field testing, final stage revision and socialization and implementation. However, in reality, researchers are allowed to modify the ten stages according to the needs and objectives of the research itself. (Nurmalasari, Y., Erdiantoro, 2020)

## RESEARCH RESULTS AND DISCUSSION

### A. e-Sisaga Application Model Design

The development of the e-sisaga application uses the prototype method. Researchers chose to use the prototype method because the prototype method is a very good and fast application

development method in designing applications. The steps of developing e-sisaga in the form of collecting needs, designing and testing the system in accordance with the steps of the prototype development method.

The e-sisaga model developed is very communicative and pays attention to the relationship between one component and another or is well systemized. As stated by Davis and Parker (2000), that to use the application it is necessary to pay attention to the use system properly because the system must have a relationship between one part and another. (Abbott & Peters, 2000)

In addition to the system, another thing to consider is the information provided in the application. (Sari et al., 2020) The e-sisaga model also presents information that is easy to obtain and use in various ways such as the results of teacher supervision assessments based on the scope of PAI teacher competencies, namely the results of academic supervision on aspects of PAI teachers' main tasks, namely lesson planning, implementation and assessment of learning and follow-up. In addition, the results of academic supervision can also be seen based on each of them in the current school year and the previous year's period. (Ali & Syarnubi, 2020)

In the e-sisaga model, there are various new menus that can make it easier for users to operate, which are equipped with user guides in the form of PDFs and video tutorials that can be downloaded. Especially for users of supervised teachers, there is convenience in submitting physical evidence documents that have been prepared either in the form of files, photos or in the form of videos, supervisors can save the physical evidence documents on Google Drive and then copy the link to be embedded in the menu that has been provided. (Rahmatullah et al., 2020)

The e-sisaga application is an application model developed in the form of an e-supervision application. The e-sisaga application as an e-supervision application has characteristics: namely:

1. The e-sisaga application is a form of the result of utilizing the sophistication of electronic technology that facilitates its users (supervisors and teachers) without being limited by space and time.
2. The e-supervision application utilizes the advantages of digital media and computer networks so that it can be operated using desktop and mobile devices.
3. The e-sisaga application has a database stored on a server and can be accessed anywhere and anytime as long as it is connected to the internet network.
4. The e-sisaga application has menu features in the form of academic supervision, supervision assessment results, coaching rooms as follow-up, monitoring and evaluation menus and various official information that is relevant and needed by PAI teachers.
5. The e-sisaga application was developed by adjusting the features of Google Workspace with the functions of each facility provided. In addition, the characteristics of the e-sisaga application are the same as the basic characteristics of the website.

The e-sisaga application is a website developed with a collaborative system for making application software according to the design that has been designed by researchers. So that the e-sisaga application can facilitate users and can accommodate educators who are unable to develop the e-sisaga application independently due to limitations in terms of IT mastery.

Researchers pay programmers with an agreed amount of fees, in addition there are domain and hosting rental fees that are paid once a year. Somewhat different from commercial websites that provide ready-made service packages, in this development the researcher is more dominant in determining every design idea and action in the process. Therefore, the researcher did not pay the license fee but the service fee and the domain and hosting rental fee.

As a facility specifically designed for academic supervision, the e-sisaga application accommodates every supervisory activity. The presence of innovation in the form of e-sisaga application in West Sumatra SMA/SMK is a form of quality assurance efforts for educational institutions within the education office. e-sisaga can be used to maintain good quality supervision, especially in academic supervision and follow-up activities. In accordance with the characteristics of the supervised religion teacher, the application provides a menu design that can be used to display Islamic values related to academic supervision that can be witnessed by users when using

the application. The e-sisaga application can be used in full online and blended academic supervision.

The application is designed to be flexible to use according to conditions. The menus provided in the application are asynchronous and synchronous. The asynchronous nature means that this application can be accessed anytime and anywhere. The synchronous nature means that this application provides features as a live learning facility for interaction between users. Therefore, supervisors can provide applications as academic supervision facilities, both during the pandemic and when lecture activities can be carried out in schools.

## **B. Validitas, Praktikalitas dan Efektifitas Aplikasi e-Sisaga**

In this development research, the validity of the academic supervision model using the e-sisaga application is based on input from 5 experts (expert review) and practitioners in the field, supervisors and peers in Focus Group Discussions (FGDs) on the product.

Practicality is based on suggestions and input from supervisory practitioners and teachers and based on observations of 60 teachers and 10 supervisors on the implementation of this website-based academic supervision model. While the effectiveness of the e-sisaga model is based on the effectiveness and teacher response to e-sisaga and teacher achievement or competence.

The quality of development products in this study is determined by validity, practicality and effectiveness. (Wulandari et al., 2021) The e-sisaga application has gone through the validity test, practicality test and effectiveness test stages. The results of the trial have obtained that the e-sisaga application is very valid, very practical and very effective e-sisaga application is discussed in the following description. In detail, the discussion of the quality of e-sisaga is as follows:

### **1. Validity of e-sisaga Model**

#### **1) Product Validity**

In the development stage, several tests were carried out to improve the quality of the products produced. Before conducting product validation, instrument validation was first carried out. This is done to ensure that the product to be validated has a valid instrument.

Product validity is determined from the results of expert reviews of the product and is a determining aspect of the quality of product development research products. Product validity includes content validity and construct validity. (Damayanti et al., 2022)

Content validity testing shows that the product developed is based on a strong theoretical rationale. The theory underlying the product development has been described in detail. Construct validity shows that the products developed are based on state of the art knowledge and there is internal consistency between product components.

The validated product consists of a supervisor academic supervision model book, an e-sisaga model and an e-sisaga user manual. The product was tested on five experts consisting of content experts, linguists, programmers and also taken from practitioners. Tessmer in (Syarnubi, Martina, 2019) Sugiyono stated that products that have been validated by experts have a better level of resistance than other techniques, of course by continuing to make revisions in order to produce a more perfect product. Sugiyono emphasized that to carry out the validity test, at least three experts were carried out, and the more experts, the better the quality of a product. (Sugiyono, 2013)

The validation test of the supervisor's academic supervision model book consists of aspects of material substance, presentation, technical and language used. Then the validation test of the e-sisaga model consists of aspects of program organization and menu display for each teacher and supervisor account. While the validation test of the user manual consists of aspects of material substance, presentation, technical and language used. The results of the validation test assessment of the three products in the very valid category.

Based on the results of the validity test from the validator, with the acquisition of results in the valid category, then further limited tests were carried out in the form of feasibility tests and FGDs. From the limited test activities, the three products were in the

very feasible category. While the FGD activities obtained various inputs to make revisions related to the e-sisaga model.

## 2) Content Validity

Content validity testing is based on a strong theoretical rationale. The theory underlying the e-sisaga application model on supervisory academic supervision activities has been used in the application content. The application menus have met the needs of academic supervision theories and procedures. (Sutarmizi & Syarnubi Syarnubi, 2022)

The validator rated the menus in the e-sisaga application as very good as described below:

- 1) The Home menu on the account of PAI supervisors and teachers was developed to give a touch of Islamic education value by providing an opening greeting slide and a slide containing arguments about educators.
- 2) The slider menu on the supervisor's account was developed as an administrative feature and supervision material to manage the appearance of the application's opening greeting and a means of conveying Islamic education values related to academic supervision.
- 3) The main data menu containing supervisor data on the admin account was developed as an administrative feature to verify the data of supervisors who have registered.
- 4) The main data menu contains PAI teacher data on the admin account developed as an administrative feature to verify PAI teacher data that has been registered.
- 5) The PAI teacher per-group menu on the admin account was developed as an administrative feature to check the completeness and accuracy of the PAI teacher's name with the name of the supervisor in each group. Menu perencanaan e-sisaga dikembangkan sebagai fitur yang menampilkan sub menu program supervisi akademik, jadwal, RPA dan instrumen supervisi akademik
- 6) The e-sisaga implementation menu was developed as a feature that displays the sub menu of teacher administration supervision and observation of learning implementation and assessment of PAI teachers.
- 7) The e-sisaga follow-up menu was developed as a feature that displays the PAI teacher guidance and training menu and academic supervision reports.
- 8) The Bimlat menu on the coaching room page consists of an agenda on the account of the supervisor and PAI teacher developed as an administrative feature for scheduling PAI teacher coaching activities for one semester.
- 9) The material menu on the supervisor's and PAI teacher's accounts was developed as the delivery of coaching materials in academic supervision.
- 10) The discussion menu on the google classroom forum on the PAI supervisors' and teachers' accounts was developed as a material delivery feature and an online communication feature for coaching PAI supervisors and teachers.
- 11) The video conferences menu on the google classroom coaching room for PAI supervisors and teachers was developed as a feature for delivering coaching materials and online coaching communication features.
- 12) The task upload menu containing administrative uploads, lesson plans and teaching videos on PAI teacher accounts was developed as a testing feature for guidance and practice in designing lesson plans and practicing basic teaching skills.
- 13) The PAI teacher academic supervision menu on the account, which contains a detailed assessment form, was developed as an assessment feature to provide feedback on PAI teachers' ability to design lesson plans (RPP) and mastery of teaching skills.
- 14) The PAI teacher observation menu on the supervisor's account, which can store more than one different file, was developed as an assessment feature for repetitive

feedback on PAI teachers' ability to design lesson plans and mastery of teaching skills.

- 15) The observation assessment results menu on the PAI teacher's account was developed as an assessment feature so that PAI teachers know the supervisor's assessment of lesson plan design (RPP) and teaching skills and pay attention to the suggestions given as a guideline for improving skills.
- 16) The report menu on the supervisor's account contains a report on the results of academic supervision of PAI teachers, developed as an assessment feature to evaluate the progress of PAI teachers' abilities.
- 17) The discussion menu contains chat rooms and virtual meetings on the accounts of PAI supervisors and teachers was developed as a communication feature to facilitate supervisor discussions with PAI teachers and PAI teachers in one group.
- 18) The report menu containing the supervisor data report on the admin account was developed as an Administrative feature to print the e-sisaga application user supervisor data report.
- 19) The report menu containing PAI teacher data reports on the admin account was developed as an administrative feature for printing PAI teacher data reports for e-sisaga application users.

### 3) Construction Validity

Application construction is seen in the application system design and its function flow. The e-sisaga application system is in accordance with the components that build an e-learning system. (Prawiradilaga, 2018) validators assessed the development of the e-sisaga application very well on construction as described below:

- 1) The construction of the e-sisaga application was developed by including the application name and logo, URL link to access, sign up and sign in fields (PAI supervisors and teachers), database, and menus on each account needed for academic supervision activities.
- 2) The e-sisaga application is developed with an attractive appearance and characterizes its usefulness as a medium for academic supervision activities of PAI supervisors.
- 3) The construction of the e-sisaga application was developed specifically for the needs of PAI Teachers' academic supervision activities
- 4) The e-sisaga application is developed in the form of a website application so that it can be accessed through all browser applications without having to install the program.
- 5) The security system of the e-sisaga application was developed using a username and password.
- 6) The e-sisaga application menu was developed with connections between menus within the account and between accounts.
- 7) The construction of the e-sisaga application was developed by paying attention to the balance of the comparison between the size of the font and the image
- 8) The construction of the e-sisaga application was developed by paying attention to the suitability of the combination of images, colors, and writing
- 9) The construction of the e-sisaga application was developed by paying attention to the use of clear language and terms that are easy to understand.

### 4) Language Validity

Language in the application can be seen in the naming of each element in the application system, instruction sentences in the menu, descriptions in the features. The language used in any form certainly contains a message, the condition of a good message is that the message must be oriented to the audience. The message must be easy to understand and precise. (Misdar et al., 2017) Istilah-istilah dalam aplikasi mengikuti istilah yang sering digunakan dalam supervisi akademik dan aplikasi sering digunakan di

masyarakat. Validator menilai pengembangan aplikasi e-sisaga sangat baik pada penggunaan bahasa sebagaimana uraian berikut:

- 1) The e-sisaga application is developed using language that is in accordance with the general guidelines for Indonesian spelling
- 2) The application is developed using language that is in accordance with the user's cognitive development level.
- 3) The instructions in the application menu used are simple, clear, and easy to understand.

#### **5) Praktikalitas Model e-sisaga**

Based on the results of the e-sisaga model development stages, field test activities were then carried out to obtain the level of practicality and effectiveness of the product. The practicality test was conducted on product users, namely supervisors and teachers totaling 60 users. The criteria for the practicality test are the practicality of the supervisor's academic supervision model book, the practicality of the e-sisaga model and the e-sisaga model user manual.

The results of the practicality test of the supervisor's academic supervision model book, e-sisaga model and user manual. The practicality test of 60 users found that the supervisor's academic supervision model book, e-sisaga model and user manual were in the very practical category. Based on this assessment, it is stated that the product is very practical to use.

The practicality of the e-sisaga application is known from the results of practitioner assessments (supervisors and teachers) after using the product in limited field trials and wider field trials. The results of the practicality test show that the academic supervision model book, e-sisaga application and its user manual are very practical.

The practicality of the academic supervision model book product includes practicality in the aspects of objectives, material, language, graphics and reference to the academic supervision model book. Positive responses from practitioners (supervisors and teachers) that the development of the e-sisaga application is very practical to use and hope that this model development book can be used by SMA / SMK supervisors in West Sumatra Province.

#### **6) Efektivitas Model e-sisaga**

After the practicality test, the effectiveness of the product was tested in order to see the effectiveness of using the product. The results showed very effective results, thus it can be stated that the product is very effective in using academic supervision activities.

Based on the results above, it can be concluded that the e-sisaga model has met the requirements as a model. Rina Riana (2014) states that software can provide user convenience in obtaining and using information. The characteristics of this e-sisaga model are found in the aspects of the supervisor, the scope of supervision, the supervised teacher, the assessment process and the assessment results.

While the characteristics of the teacher being assessed, there is ease in submitting physical evidence documents that have been prepared either in the form of files, photos or in the form of videos, the teacher can save the physical evidence document on Google Drive and then copy the link to be embedded in the menu that has been provided besides also conducting a self-assessment (personal assessment). The characteristics of the assessment process are various menu bars that can make it easier for users to operate it, which is equipped with a user guide in the form of PDF and video tutorials that can be downloaded. The assessment process can be done online using cell phones, laptops and computers.

The assessment results present information that is easily obtained and used in various ways such as the results of the supervisor's academic supervision based on the PAI teacher's main tasks and functions, namely supervision of planning, implementation and assessment of learning. In addition, the supervisor's academic supervision can also be used by the supervisor and all teachers assisted in the current supervision period and the results of the assessment period in previous years.



The indicators of the effectiveness of e-sisaga in academic supervision activities using e-sisaga are as follows:

- 1) The implementation of academic supervision using the website-based e-sisaga application can achieve supervision objectives effectively.
- 2) Implementation of academic supervision using the website-based e-sisaga application can achieve supervision objectives efficiently
- 3) The implementation of academic supervision using the web-based e-sisaga application can develop PAI teachers' professional competence.
- 4) The implementation of academic supervision using the web-based e-sisaga application can develop the personal competence of PAI teachers
- 5) The implementation of academic supervision using the web-based e-sisaga application can develop various basic skills of PAI teachers
- 6) The implementation of academic supervision using the web-based e-sisaga application can develop teachers to prepare class administration
- 7) The implementation of academic supervision using the web-based e-sisaga application can motivate teachers to develop lesson plans
- 8) The implementation of academic supervision using the website-based e-sisaga application can motivate teachers to compile assessment administration instruments
- 9) The implementation of academic supervision using the web-based e-sisaga application is effective in helping supervisors and teachers in classroom supervision activities.
- 10) The implementation of academic supervision using the web-based e-sisaga application can motivate teachers to implement various innovative learning models
- 11) The implementation of academic supervision using the website-based e-sisaga application can motivate teachers to use a variety of learning media
- 12) The implementation of academic supervision using the website-based e-sisaga application can improve the quality of learning
- 13) Implementation of academic supervision using the website-based e-sisaga application can motivate teachers to carry out various learning activities that can be controlled properly
- 14) Implementation of academic supervision using the website-based e-sisaga application can increase the sense of responsibility for professional duties
- 15) The implementation of academic supervision using the website-based e-sisaga application can carry out supervision thoroughly and comprehensively
- 16) The implementation of academic supervision using the website-based e-sisaga application can motivate teachers to carry out follow-up based on the results of the supervision report from the supervisor.

The opportunities for using this e-sisaga model can carry out supervision proportionally so that it can be used in relation to efforts to obtain information on the strengths and weaknesses of each teacher as a basis for coaching and continuous professional development. (Arisca, 2020) In addition, this e-sisaga model can be used to support the pokjawas program in carrying out its duties and functions. Where one of the agendas is the supervisor strengthening program.

The era of the industrial revolution 4.0 requires various activities to be carried out based on technology, especially activities in the field of education. In addition, the use of various technological applications after the Covid 19 pandemic, where various school activities demand to be carried out online, the existence of this e-sisaga model is very relevant to be used in accordance with technological demands to support online teacher competency assessment activities.

The existence of this e-sisaga model is very meaningful in conducting proportional assessments so that it can contribute to improving the quality of education in schools, because information on the achievement of teacher competencies will provide supervisory

input regarding the quality of schools desired by the community, besides that supervisors will measure their own activities so as to increase motivation to work.

Teachers will prioritize programs and activities that will improve their competence, and this e-sisaga model greatly contributes in terms of providing information about the position and position of the supervisor compared to others, as well as contributing to identifying problems faced by supervisors both internal and external problems. Thus, in PAI teacher development activities, competency-based development activities can be carried out. (Syarnubi et al., 2023) Teachers are grouped based on the aspects of competency that they have not/still do not perform optimally.

### C. Limitations of Model Development

Based on the results of the analysis that has been carried out, there are several limitations to the development of a website-based e-sisaga application model on supervisory academic supervision. For future development improvements, it is necessary to pay attention to these limitations. The limitations of this development are: (Yanti et al., 2021)

1. The wider field trial is still limited to six city districts in West Sumatra.
2. The effectiveness test is limited to the use of the e-sisaga application in achieving the objectives of academic supervision in carrying out comprehensive and thorough supervision, developing teacher competence with teacher motivation to develop learning tools, teacher motivation to use media, learning models not yet on other aspects.
3. Allocation has not passed the ISO 25010 quality standard test specifically for software.

## CONCLUSION

The development of the model shows that the implementation of academic supervision in the field is still not optimal and has not run optimally, therefore a website-based academic supervision model is needed that can help teachers and supervisors in implementing supervision as a whole. The development of a website-based academic supervision model is designed according to the needs of the field. The website-based academic supervision model was developed using an application called e-sisaga which stands for Electronic Information System for Academic Supervision of Religious Teachers. The e-sisaga application was developed using Google Workspace, namely (1) Google Sites; (2) Google Drive; (3) Google Sheets; (4) Google Docs; (5) Google Data Studio; (6) Google Forms; (7) Google Classroom and (8) Google Meet.

The product design developed at this development stage is the design of the e-sisaga model which includes the design of the academic supervision model book, the design of the website-based e-sisaga application, and the design of the e-sisaga user manual. The design of the website-based academic supervision model book is designed to help users to conduct academic supervision comprehensively and professionally. The e-sisaga application design is a website-based academic supervision application, which stands for information system and academic supervision of religious teachers. Website with link <https://www.webfilma.com> which is useful to facilitate supervisors in conducting academic supervision and coaching of religion teachers online and blended supervisors. The design of the e-sisaga application consists of administrative functions, evaluation functions and communication functions. These functions are contained in the menu provided for each user account, namely for supervisors and PAI teachers. Menu creation is tailored to the functions of each user in the implementation of academic supervision. The e-sisaga application is a paid website. Researchers in making it incurred the cost of upgrading services, domain rental fees and hosting rental. However, unlike other commercial websites, researchers are responsible for design, production, supervision, and maintenance, so this application belongs to researchers and researchers do not pay license fees.

The e-sisaga model product which is equipped with an academic supervision model book, e-sisaga application, and e-sisaga application guide was assessed as valid by a team of validators and declared practical and effective by the model users, namely PAI supervisors and teachers. The e-sisaga application model used has been tested for validity, usefulness and effectiveness. The validity of the e-sisaga model in the form of an academic supervision model book, e-sisaga application and e-sisaga application guidebook is in the very valid category. The practicality test is in the very feasible and practical category. Likewise, the effectiveness test is in the very effective category. Therefore, the product of the academic supervision model book, e-sisaga application and e-sisaga application guide is very valid, practical and effective to be used in academic supervision activities of supervisors in fostering PAI teachers' competence.

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