THE EFFECTIVENESS OF INFORMATION AND COMMUNICATION TECHNOLOGY-BASED SUPERVISION MODEL DEVELOPMENT AT SMK SURAKARTA

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Abstract

The purpose of this study is to test the feasibility of an academic supervision model based on information and communication technology. Feasibility consists of three aspects: validity, practicality, and effectiveness. This research was developed by the R&D method, which was modified into five steps, namely the define stage, design stage, development stage, and dissemination stage. The field test design is the One Group Pretest-Posttest Design. The results show that technology-based, informatics, and communication academic supervision modules with Microsoft Teams are appropriate to be applied in the implementation of technology-based academic supervision, informatics, and communication. The results obtained show that the developed model is valid, practical, and effective in increasing progress in the process of academic supervision based on technology, informatics, and communication. With this model of maximum teacher assessment, all are assessed. The assessment of academic supervision went smoothly; 126 teachers could be assessed all and more optimally. Researchers recommend that school principals implement this supervision model using Microsoft Teams. Further research is needed using different applications using models that have been developed in academic supervision assessments.
Keywords: Model of Academic Supervision. Microsoft Teams

Abstrak

Tujuan dari penelitian ini adalah untuk menguji kelayakan model supervisi akademik berbasis teknologi informatika dan komunikasi. Kelayakan terdiri dari tiga aspek: validitas, kepraktisan dan efektivitas. Penelitian ini dikembangkan oleh metode R&D yang dimodifikasi menjadi lima langkah, yaitu: (Tahap pendefinisian (Define), Tahap Perancangan (Design), Tahap pengembangan (Develop), dan Tahap Penyebaran (Disseminate). Desain pengujian lapangan adalah Desain One Group Pretest-Posttest. Hasil menunjukkan bahwa modul supervisi akademik berbasis teknologi, informatika dan komunikasi dengan Microsoft Teams tepat untuk diterapkan dalam pelaksanaan supervisi akademik berbasis teknologi, informatika dan komunikasi. Hasil yang diperoleh menunjukkan bahwa model yang dikembangkan valid,

praktis, dan efektif untuk meningkatkan kemajuan dalam proses supervisi akademik berbasis teknologi, informatika dan komunikasi. Dengan model ini dalam penilaian guru maksimal semua dinilai. Penilaian supervisi akademik berjalan dengan lancar dari 126 guru bisa dinilai semuanya dan lebih maksimal. Peneliti merekomendasikan bagi kepala sekolah untuk menerapkan model supervisi dengan menggunakan Microsoft Teams ini. Diperlukan penelitian lebih lanjut menggunakan aplikasi yang berbeda menggunakan model yang telah dikembangkan dalam penilaian supervisi akademik.
Kata kunci : Model Supervisi Akademik. Microsoft Teams

INTRODUCTION

Education in the era of the industrial revolution 4.0 to 5.0 requires the development of educational science in accordance with the needs of improving quality, so it requires human resources who are able to develop potential in the digital world and master skills in following the world of digitalization that can be used in improving the quality of education.[1] The scope of education in an era of increasing digitalization is not evenly distributed, and there is a need for supervision model products that can be used to facilitate the education process. Supervision is an important activity in the practice of providing education. These activities are intended as control activities for all educational activities to direct, supervise, foster, and control in achieving goals; furthermore, this activity also has the responsibility of improving the quality of education.[2] Supporting the formulation in Permendikbud No. 65 of 2013, it has been clearly detailed that the duties of the principal in carrying out academic supervision include preparing a supervision program starting from planning, implementing, and reporting the results of academic supervision. The principal provides academic supervision in the implementation of learning activities so that they run in accordance with the vision and mission.[3] The principal performs leadership; the main instrument is supervision. In this case, it is necessary to have substantive abilities (main leadership) and procedural abilities to encourage the creation of a curriculum that is in accordance with the needs of today's educational world.

Supervision is an opportunity to improve teacher abilities, abstract thinking, and reflection on teacher learning methods. The principal is required to carry out supervision activities, so the principal must have the competence to create an academic supervision program. Academic supervision program planning is the preparation of planning documents. The supervision program is prepared by taking into account the provisions on the implementation of supervision and supervision regulated in Permendikbud No. 65 of 2013 concerning process standards, namely: supervision of the learning process is carried out through. Aims to describe the

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[1] Ikhfan Haris et al., "School Supervision Practices in the Indonesian Education System; Perspectives and Challenges," *Journal of Social Studies Education Research* 9, no. 2 (2018): 366–87, https://doi.org/10.17499/jsser.17724.

[2] Rais Hidayat and Yuyun Elizabeth Patras, "Evaluasi Sistem Pendidikan Nasional Indonesia," *International Seminar on Quality and Affordable Education (ISQAE)*, no. 2 (2013): 79–88.

[3] Akmal Udin et al., "Implementation of Academic Supervision of Junior High School Supervisors in Indonesia," *PENDIPA Journal of Science Education* 4, no. 2 (2020): 45–50, https://doi.org/10.33369/pendipa.4.2.45-50.

current implementation of supervision, develop models, validate models and analyze the practicality of models.

This research method is Research and Development. In the preliminary study, literature studies, field studies and descriptions of findings analysis were carried out.[4] Data collection techniques are carried out using interviews, questionnaires and observations. The development stage includes conceptual development, model validation involving experts and practitioners. Research results (1) the factual model of academic supervision still has weaknesses; (2) the developed model is validated with an excellent degree of validity; (3) The developed model is practical and effective used by supervisors to carry out academic supervision. monitoring, supervision, evaluation, reporting, and follow-up activities periodically and continuously.[5] Research conducted Sugiyono.[6]

Research Lina Handayani and Achmad Hilal Madjdi aims to develop an academic supervision model that suits the needs of teachers and a model that can be assessed for feasibility to find solutions to supervision problems.[7] This research was conducted using research and development methods by developing a peer-based academic supervision model. The sample used was a teacher from SMP Negeri Bae Kudus District.[8] The results of the study show that the peer-based academic supervision model can be applied as an academic supervision model that meets the needs of teachers and can be a solution to the problem of overlapping duties and roles of the principal.

Research One of the programs that can be held in the context of empowering teachers is academic supervision. Academic supervision is a series of activities to help teachers develop their ability to manage the learning process for the achievement of learning objectives.[9] Through this activity, school principals are also expected to be able to develop the skills and competencies possessed by teachers to meet professional requirements mandated by national education laws,

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[4] Kgs Rachmad Dody Fadillah, Happy Fitria, and Alfroki Martha, "Academic Supervision in Improving Teachers' Professional Competency in Paramount School Palembang," *JPGI (Jurnal Penelitian Guru Indonesia)* 6, no. 2 (2021): 367, https://doi.org/10.29210/021057jpgi0005.

[5] Miftahul Laili Hasanah and Muhammad Kristiawan, "Supervisi Akademik Dan Bagaimana Kinerja Guru," *Tadbir : Jurnal Studi Manajemen Pendidikan* 3, no. 2 (2019): 97, https://doi.org/10.29240/jsmp.v3i2.1159.

[6] Sugiyono, Wahyu Hardyanto, and Masrukan, "Developing Academic Supervision Model Assisted by The Information System Management on Geography Teachers of Senior High School in Pekalongan Regency," *Educational Management* 8, no. 1 (2019): 88–96.

[7] Su`ad Lina Handayani, Achmad Hilal Madjdi, "Pengembangan Model Supervisi Akademik Berbasis Rekan Sejawat Di SMP Negeri Se-Kecamatan Bae Kabupaten Kudus," *02 Agustus 2021* 4, no. 2 (2021): 317–34.

[8] Renata, Dessy Wardiah, and Muhammad Kristiawan, "The Influence of Headmaster's Supervision and Achievement Motivation on Effective Teachers," *International Journal of Scientific and Technology Research* 7, no. 6 (2018): 44–49.

[9] Lina Handayani, Achmad Hilal Madjdi, "Pengembangan Model Supervisi Akademik Berbasis Rekan Sejawat Di SMP Negeri Se-Kecamatan Bae Kabupaten Kudus."

namely pedagogic, personality, social, and professional competencies. Academic supervision at SMK Negeri 5 Surakarta is carried out by the principal conventionally or manually, not using information technology.[10] This is not suitable during the new COVID-19 pandemic, where learning applies in both online and offline modes. With the help of technology and information, it is hoped that the implementation of supervision can run optimally.

RESEARCH METHODS

Research activities were carried out to obtain information about development activities carried out to produce an academic supervision model based on information and communication technology through the Microshift Team application. The development model used is the Borg & Gall model, which is arranged in 10 stages, namely: (1) research and information gathering; (2) planning; (3) development of a preliminary form of the product; (4) preliminary field testing; (5) main product revision; (6) main field testing; (7) operational product revision; (8) operational field testing; (9) final product revision; and (10) dissemination and implementation. Furthermore, Sugiyono modified the stages of research and development of Borg and Gall into 10 (ten) steps of research and development (R & D). The development procedure is a stage that must be carried out in developing a product.[11]

The development procedure is useful to clarify the steps used in this study. ICT-based supervision application development procedure based on Research and Development (R&D) research with the Borg and Gall model modified by Sugiyono, namely by using (1) problems and potentials, (2) data collection, (3) product design, (4) design validation, (5) product trials, (6) product revisions, (7) usage trials, and (8) product revisions. The stage is therefore tailored to the needs of the field and research. The subject of the study was an academic supervision model at SMK 5 Surakarta. The respondents to the study were principals of vocational schools in the Surakarta area. Research instruments are interview guidelines, observation sheets, academic supervision model validation sheets, supervision planners, class visits, class pre-observation, academic supervision post-observation, and academic.

The model validation data was developed after first a pre-supervision meeting with an interview using Meet, WA, Call or video.[12] Observation with a technician installing an Android phone in class and running a meet, analyzing the results of observations by inputting the results

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[10] Hadi Abdillah and Burhanuddin Basri, "The Effect of Clinical Model Supervision and Academic Model Supervision on Nursing Care at the Community Health Center of Sukabumi Regency," *KnE Life Sciences* 2021 (2021): 594–612, https://doi.org/10.18502/kls.v6i1.8655.

[11] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif Dan R&D*, Cetakan Ke-26 (Bandung: Alfabeta, 2018).

[12] J Jamila, "Pengembangan Model Supervisi Akademik Berbasis Kolaboratif (Studi Pada Pengawas Smp Dinas Pendidikan Kota Medan)," *Jurnal Manajemen Pendidikan Dasar, Menengah Dan ...* 1, no. 1 (2019): 26–36.

collected, then a post-observation meeting with a post-supervision interview and giving an assessment, and finally a report.[13] Data on the implementation of academic supervision were analyzed qualitatively by revising readability and action steps in the assessment. Revisions are carried out in accordance with the results of observations made by observers on the implementation of supervision and the opinions of experts and peers.

RESULTS AND DISCUSSION

Implementation of ICT-based supervision development

The implementation of learning supervision is intended to assess the ability of teachers in carrying out learning, in addition to an effort to improve teacher professionalism that is oriented to the objective conditions of implementing teacher duties in learning.[14] So as to get an overview of teacher competency profiles, especially in implementing the applicable curriculum.[15] The teacher competency profile is obtained based on data from the results of the supervision carried out by the principal in the previous year, which is aligned with the main duties of teachers in learning activities ranging from planning, implementing, and assessing learning outcomes referring to the applicable curriculum.

In the context of the current implementation of the 2013 Curriculum, academic supervision instruments need to be developed in accordance with learning approaches and learning and assessment models that are essentially oriented towards character building, creativity development, and innovation.[16] The implementation of learning supervision carried out at SMK Negeri 5 Surakarta is planned at the beginning of the new academic year, precisely in July, and the implementation of supervision begins in October.[17] The headmaster supervises according to the schedule specified during the coordination meeting with all teachers. The following is the explanation of Dra. Ties Setyaningsih, M.P.D., MM., head of SMK Negeri 5, Surakarta, regarding the implementation of learning supervision.

> "*I came to the class to observe teacher competence according to the schedule determined*
>
> *during the coordination meeting. I brought some required documents, such as supervision*

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[13] Sugiyono, Hardyanto, and Masrukan, "Developing Academic Supervision Model Assisted by The Information System Management on Geography Teachers of Senior High School in Pekalongan Regency."

[14] Summaiya Arif, Sabeen Rahim, and Saima Perwez, "Effects of Guided Imagery, Zikar Azkar, and Priming Technique on Stress and Relaxation Level Among University Students," *Pakistan Journal of Psychological Research* 36, no. 2 (2021): 225–40, https://doi.org/10.33824/PJPR.2021.36.2.14.

[15] Bilal Kalkan and Nesime Can, "Psikolojik Danışman Eğitiminde Süpervizyon : Türkiye ' Deki Mevcut Durumun ve Standartların Araştırılması" 9, no. 2 (2019): 271–90.

[16] Alamgir Khan et al., "Communication Skills of a Teacher and Its Role in the Development of the Students' Academic Success," *Journal of Education and Practice* 8, no. 1 (2017): 18–21.

[17] William B. Cutrer et al., "Fostering the Development of Master Adaptive Learners: A Conceptual Model to Guide Skill Acquisition in Medical Education," *Academic Medicine* 92, no. 1 (2017): 70–75, https://doi.org/10.1097/ACM.0000000000001323.

instruments, learning tools compiled by the teacher, and learning implementation instruments."(RKS/KS/W1

The class observation technique carried out by the principal is in accordance with the results of an interview with Dra. Siti Nuriyah, M.Pd., teacher of Islamic Education at SMK Negeri 5 Surakarta, as follows.

"*When I was supervised, the principal came into the classroom and did observation activities." Some of the documents requested by the principal include the material I will deliver, the learning tools I compiled, and even the principal asked for a correction or enrichment book that I had compiled.*" (RKS/KS/W1)

The teacher's explanation above about the activities of the principal, who requested several documents prepared by the teacher in accordance with the documentation obtained by the researcher, In the documentation of the repair and enrichment book, the names of the students who participated in the program were clearly arranged. Teachers at SMK Negeri 5 Surakarta do their jobs well when every student, whether their scores have reached industry standards or not, has been given reinforcement in the form of remedial activities and enrichment. With the completeness of the teacher administration, the principal was quite satisfied with the performance of the teachers of SMK Negeri 5 Surakarta. The principal's attitude in making observations in the classroom does not interfere with the learning process.

"*When carrying out supervision activities, do not let my presence in the classroom affect the course of learning and make students uncomfortable. I have to refrain when the teacher does things that are not in accordance with what is stated in the lesson plan or the instrument I hold. I will convey what is my record after the learning supervision is completed, precisely at the time of the feedback activity and follow-up on the results of the supervision.*" (RKS/KS/W1)

Chair that has been prepared and observes every stage of learning carried out by the teacher. Student activities also do not escape the observations they make. The principal's attitude when supervising learning.

"*When I was supervised, the principal's attitude was not to emphasize and even did not intervene. He sat in the prepared chair. At first, the children occasionally looked at the principal, but I tried to divert his attention so that the students stayed in the lesson, did not feel disturbed by the principal's presence in the classroom, and asked them to concentrate on participating in learning activities. Even when there were rowdy students, the principal remained silent; he observed how I managed the class.*" (RKS/KS/W1)

The teacher's statement above provides information that the principal's attitude toward supervising is very polite and that he does not intervene. This is in accordance with the results of

an interview delivered by Dra. Ties Setyaningsih, M.Pd., MM., the head of SMK Negeri 5 Surakarta, as follows:

ICT-based Supervision Evaluation

Evaluations are conducted using computer-based assessments. Researchers want to know how the evaluation results are produced after using information and communication technology-based supervision.

> "*The evaluation we conducted by comparing the results of the evaluation in 2021 with those in 2022 will allow us to see how the presentation of improvements in vision was carried out previously using the current information technology. The results improved teacher assessment by a 2.4% increase from the previous one*." (RKS/KS/W1)

The interview with the principal compared the results of the evaluation in 2021 with those in 2022, with the results showing how the presentation of improvements such as those carried out previously used current information technology.[18] The results improved teacher assessment by a 2.4% increase from before.

> "*Comparing the results of the evaluation in 2021 with those in 2022, with these results, it will be able to see how the presentation of the vision improvement was carried out previously using the current information technology. The results improved teacher assessment by a 2.4% increase from before*." (RKS/WK/W2)

Interviews with the curriculum explained that by comparing the results of the evaluation in 2021 with those in 2022, it will be able to see how the presentation of improvements in vision was carried out previously using current information technology. The results improved teacher assessment by a 2.4% increase from the previous one. The results of interviews related to supervision planning were carried out using manuals by supervising classes when teachers and students were learning.[19] Assessment for fifteen minutes and instantly assess using paper-stationery formatted supervision assessment.

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[18] Ibrahim Bafadal Nafiah et al., "The Effect Of Artıstıc Supervısıon Approach Toward Pedagogıc Competency Of Elementary School Teachers," *Academic Research International* 10, no. 1 (2019): 70–78.

[19] Fadillah, Fitria, and Martha, "Academic Supervision in Improving Teachers' Professional Competency in Paramount School Palembang."
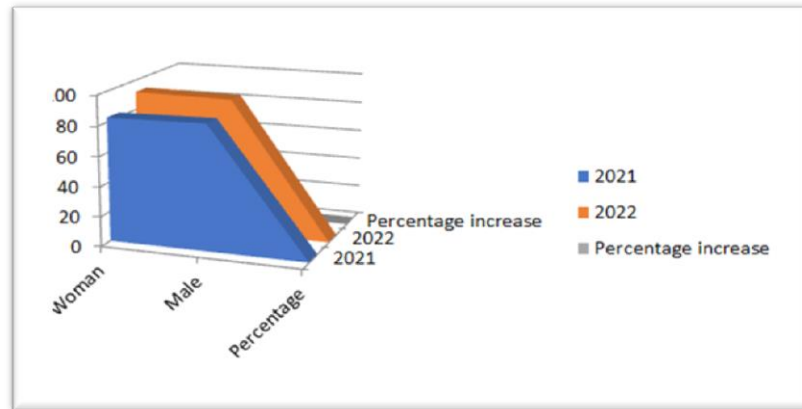
Figure 4.24: Percentage increase in academic supervision

The evaluation results after using the Microsoft Team academic supervision model effectiveness were very significant, more than 24% > 0.05%.[20] So that using an academic model based on information technology is more effective. Supervision can be helped by other teachers' heads in implementation, although it does not reduce assessment because the assessment results are directly stored in Microsoft Team. The findings in the development of academic supervision are found in Microsoft Teams, which uses technology that uses computer or Android applications. Supported by previous researchers that in supervision using Zoom applications and computers.[21]

CONCLUSION

This research produces an academic supervision model based on information technology and communication with the Microsoft Team application. IT-based academic supervision is a supervision model with teacher assessment that can use applications to facilitate implementation when teachers do learning with students. The development of academic supervision has advantages for other schools in the use of the system in teacher assessment during implementation.

ICT-based supervision application development based on Research and Development (R & D) research with the Borg & Gall model modified by Sugiyono, namely by using (1) problems and potentials, (2) data collection, (3) product design, (4) design validation, (5) product trials, (6) product revisions, (7) usage trials, and (8) product revisions. The stage is therefore tailored to the needs of the field and research. The subject of the study was an academic supervision model at SMK 5 Surakarta. The respondents to the study were principals of vocational schools in the

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[20] Suhandi Astuti, "Supervisi Akademik Untuk Menigkatkan Kompetensi Guru Di Sd Laboratorium Uksw," *Scholaria : Jurnal Pendidikan Dan Kebudayaan* 7, no. 1 (2017): 49, https://doi.org/10.24246/j.scholaria.2017.v7.i1.p49-59.

[21] Margot Pearson and Angela Brew, "Research Training and Supervision Development," *Studies in Higher Education* 27, no. 2 (2002): 135–50, https://doi.org/10.1080/03075070220119986c.

Surakarta area. Research instruments include interview guidelines, observation sheets, academic supervision model validation sheets, supervision planners, class visits, class pre-observation, academic supervision post-supervision, and academic supervision evaluation.

The modules developed are valid, practical, and effective to improve the ease of academic supervision. Teachers, when assessed, can be maximized because they are not seen directly, so the assessment can be maximized. The effectiveness rate in the assessment is 24%, and out of 126 teachers 100% of teachers can be assessed to the maximum with the help of senior teachers. Researchers recommend that principals implement the Microsoft Teams application. Further research is needed using different materials and application models that have been developed.

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