

Analysis of Science Education Supervision to Improve the Quality of Student Output

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Abstract

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Supervision of science education is an important step to ensure that teachers provide effective learning and in accordance with the science curriculum. Supervision can provide guidance to teachers to achieve educational goals and produce graduates who are recognized by society. This research uses a literature study method to gain an in-depth understanding of science education supervision. The research results show that science education supervision can help identify student needs, increase teacher competence in science, and improve learning evaluation. With effective supervision, it is hoped that the quality of education in the science field can continue to improve and produce quality graduates. The benefit of this research is that it provides a better understanding of the importance of supervision in improving the quality of student learning outcomes in the field of science education.

Keywords: Education, Supervision, Education Quality.

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INTRODUCTION

Education is the learning of all knowledge that occurs in all places and situations throughout life and has a positive impact on the development of individual living creatures. This education lasts a lifetime (long-life education). Teaching in a broad sense is also a teaching process, and the implementation of learning can occur at any time and in any environment. Education in the true sense is when a teacher gives lessons to his students. Both adults and children are expected to lead by example, learn, teach, improve ethics and morals, and explore individual knowledge. Education in the narrow sense is school. This system applies to those with student status and to school students or university students (formal educational institutions). The famous guidelines from the father of education, Ki Hajar Dewantara, are "Ing Ngaruso Sun Tulod" (example in the foreground), "Ing Majo Mangun Karso" (Central Building and Encouragement), Tut. If we understand the contents of the motto, we can conclude that the teacher's role is to form the foundation and spearhead (Pristiwanti et al., 2022).

Formal educational institutions in the form of schools will not escape problems in the learning process. School principals, teachers, staff and even

students almost certainly have problems regarding learning (Shaifudin, 2020). The quality of education, as measured by student learning outcomes, is determined primarily by teachers, particularly in developing countries (34%) and in developed countries (36%). The success of school reform depends on teachers, because teachers are leaders and facilitators of learning, as well as the center of learning efforts (Sholeha et al., 2023). The foundation for achieving educational goals in schools is the teacher's work as a team of teachers. The teacher's activities have a big influence on the implementation of the learning process, because the teacher is the leader and class guide in various activities. Educators are professional educators whose main responsibility is to educate, guide, coach, train, test and educate students at all levels of early childhood education, formal education, education and training, general education and secondary education (Salsabilah, 2021).

Indonesian education experiences ups and downs, there are many problems that pose big challenges to the quality of education. This problem is of particular concern to the Indonesian people because human quality is one of the determinants of the quality of education. Macro scope problems include a complex curriculum, unequal distribution of education, expensive education costs, and low teacher quality. Meanwhile, the micro scope includes monotonous learning methods, inadequate infrastructure, and low student achievement (Maulansyah, 2023). Most educators only provide information and assign assignments to their students, through this it can be said that teachers lack creativity in implementing learning strategies (Amrin et al., 2022: 124). Some educators still rely on old techniques which cause a lack of creativity in improving the substance of learning by not keeping up with the latest developments (Kalalo & Merentek, 2023).

The quality of education is a benchmark for achieving success in an educational process. In the field of education, there are four qualities including input, process, output and outcome. 1) educational input can be declared quality if it has undergone a process; 2) the educational process can be declared quality if it can create an active atmosphere in learning, 3) the output can be declared quality if student learning outcomes experience a significant increase in both academic and non-academic fields; 3) The outcome can be declared quality if the alumni are quickly absorbed into the world of work, receive a reasonable salary, and many parties recognize the greatness of the student. In the context of the world of education, assessing the quality of a school's graduates is based on the suitability of their abilities with the goals set by the curriculum (Suparliadi, 2021).

RESEARCH METHOD

This article's method uses qualitative library research as its main focus. Qualitative research is a method of collecting data by understanding and studying theories from various literature related to research (Adlini et al, 2022). The qualitative method is descriptive in nature with the main aim of obtaining an in-depth picture of a holistic or comprehensive understanding based on natural conditions (natural settings) of the phenomenon to be studied (Yusanto, 2019). Collecting data by searching for sources and constructing them from various sources such as books, journals and existing research. Library materials obtained from various references are analyzed critically and in depth in order to support propositions and ideas.

RESULTS AND DISCUSSION

Educational Supervision

Supervision comes from the English word "Supervision" which is composed of two words, namely "super" and "vision". Super means above or above, and vision means seeing, reviewing, observing and supervising (Setiyadi, 2020: 8). Etymologically, supervision means watching and reviewing from above what is done by superiors regarding the activities, creativity and performance of subordinates. In terms of terms in Carter Good's Education Dictionary, supervision is all efforts made by school officials to lead their subordinates such as teachers and education staff to improve teaching. This is different from McNemey's explanation which states that supervision is a procedure that contains direction and carries out critical assessments of the teaching carried out. Educational supervision techniques are tools used by supervisors to achieve the main peak or goal of supervision which is then made improvements in teaching. In the "dictionary of education" it is said that supervision is a real effort carried out by education supervisors (Rahmi et al., 2024).

The function of supervision is to coordinate all school efforts including all role holders in the school organization (Nahrowi, 2021). The school principal has a big responsibility towards teachers and the quality of their learning. As part of his role in supervising schools, the principal is responsible for providing orientation and guidance to all teachers in the school. Current school culture often hinders monitoring of the learning process (Mediatati and Jati, 2022). The objectives of supervision include 1) providing further guidance to teachers regarding educational goals; 2) train teachers' abilities to educate their students to become effective citizens; 3) assist teachers in diagnosis; 4) provide increased awareness of democratic work procedures; 5) increase teacher ambition towards maximum work; 6) helps teachers get evaluations of their activities (Nasution, 2023).

The Role of Educational Supervision in Improving Teacher Performance

Educational supervision can help in identifying student needs, science abilities, and learning goals to be achieved. Apart from that, increasing teacher competence in science is also very important. Teachers need to have the ability to select and develop learning materials that are appropriate to digital technology, as well as utilize technology in providing assignments and evaluations. Learning evaluation is also an important aspect in educational supervision, because it can evaluate the extent to which understanding in science learning has been successful and identify strengths and weaknesses that need to be improved. By paying attention to this aspect, educational supervision can make a significant contribution in advancing learning in the digital era (Bestari et al., 2023).

The role of supervision in improving the performance of science teachers is as a continuous supervision activity with teacher performance indicators, the activity in question can be in the form of service assistance to teachers to improve their performance (Rohmawati, 2023). Improving the learning process is an effort carried out systematically and deliberately to create educational interactions between students and educators in learning activities. This teaching process is carried out by preparing clear teaching materials and using material sources that are appropriate for students. Increasing teacher capacity is also important in this

improvement, and the supervisor's responsibility is to provide assistance and improvement to the learning process so that it is effective. The aim of this improvement is to look at teachers' lack of readiness, lack of teaching strategies, and mismatch of teaching materials with the curriculum. Supervision is carried out to develop a better learning situation. All of these efforts aim to achieve the ultimate goal of education, namely the maximum personal formation of children (Sulaiman, 2023).

The Influence of Supervision on Teacher Performance in Teaching and Learning Activities

Academic supervision is a series of activities that aim to help teachers develop their abilities in managing the learning process in order to achieve learning goals. The aim of academic supervision is to provide services to teachers so that they can develop their own professional abilities. This supervision is designed to assist teachers in presenting a quality learning process. The focus of academic supervision is to improve the quality of the learning process presented by the teacher, so that student learning outcomes become better. The main task of a school supervisor in academic supervision is to guide teachers in carrying out learning management, including planning, implementing and assessing learning (Tengko et al., 2021).

One of the efforts made by the government to improve the quality of education in schools is by applying quality management theories and concepts. The aim is that the quality of education can be maintained and recognized as a good educational institution with satisfactory results. One of the approaches used is School Based Management (SBM), which involves various criteria such as output, process, teaching and learning process, safe and orderly school environment, management of teaching and education staff, school quality culture, good teamwork, participation. active school and community members, willingness to change, continuous evaluation and improvement, responsive to needs, good communication, good management of the school environment, as well as clear quality policies, goals and targets. So, the quality of student output becomes very important. Good educational output includes high academic achievement, critical thinking abilities, social skills, and strong moral values. To achieve this, high motivation in students is also very necessary. Students need to have strong motivation to achieve the expected achievements and develop themselves optimally. With efforts to improve the quality of education and attention to the quality of student output, it is hoped that education in Indonesia can provide great benefits for individual development and the progress of the nation as a whole (Subaidah & Nadlir, 2023).

CONCLUSION

This research highlights the importance of supervision in efforts to develop educational performance in Indonesia. Supervision plays a central role in providing supervision, review and assessment of educators. Supervision of science education is an important step in improving the quality of education in the field of natural sciences (science). Through supervision, teachers can be evaluated in a structured manner to ensure that they provide effective and relevant learning in the science curriculum. Through supervision, superiors can provide guidance to educators to

achieve educational goals and produce graduates who can be assessed well by society.

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