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The Effect of Subject-Teacher Meeting Activities on The Teacher's Teaching Quality and Student's Learning Outcomes

Samsudin[1], Bambang Budi Wiyono[2*], Arda Purnama Putra[3], Maisyaroh[4], Khalip Musa[5]

Abstract

One of the efforts conducted to improve the quality of education in Indonesia is improving the teacher's teaching quality. If the teacher can manage the learning process effectively, it will be easy to facilitate the student learning process effectively as well. One program that can be carried out is through the subject-teacher meeting (STM). However, so far, there has not been much study on how the implementation of subject-teacher meetings affects the teacher's quality of learning. This study aimed at examining the effect of STM on teachers' teaching quality and students' learning outcomes. This research was conducted in East Java Indonesia with a total sample of 112 teachers using the cluster random sampling technique. Data collection techniques employed questionnaires and documentation, while data analysis techniques used descriptive statistics and structural equation modeling. The results showed that STM activities had a direct effect on the teacher's teaching quality, and they had direct and indirect effects on students' learning outcomes. Some of the effective activities are preparing a learning implementation plan that also has a direct effect on students' learning outcomes. The teacher's teaching quality has a direct effect on student learning outcomes. The higher the teacher's teaching quality, the higher the learning outcomes achieved by the students.

Keywords: *Subject teacher meeting; Teaching quality; Learning outcomes; Teacher; Students.*

Introduction

Education is the major means to carry out the life of the nation. The main purpose of education is to develop human abilities, both physically and spiritually, toward a higher level of maturity. Through education, skilled, dynamic humans will be produced, and as a result, they can maintain the integrity, progress, and civilization of the nation.

Related to the increasing development of society and technology, the function of education in the life of the nation has also increased. The development of science and technology is very quick; on the one hand, it brings enormous benefits; on the contrary, it can also have a negative impact on people's lives. The role of education is not only to form human beings who can adapt to life but also to contribute to the development of

[1] Educational Management Study Program, Faculty of Education, Universitas Negeri Malang, Indonesia
[2] Educational Management Study Program, Faculty of Education, Universitas Negeri Malang, Indonesia, bambang.budi.fip@um.ac.id; http//orcid.org/000-0001-8351-5453
[3] Elementary School Teacher Education, Faculty of Education, Universitas Negeri Malang, Indonesia
[4] Educational Administration Department, Faculty of Education, Universitas Negeri Malang, Indonesia
[5] Faculty of Economics and Management, Sultan Idris Education University Malaysia, Malaysia

society. For this reason, the quality of education must always be improved. Education is required to produce intelligent human beings and to appreciate and internalize the noble values of community life.

The implication of efforts to improve the quality of education depends on efforts to improve the quality of the teaching and learning process. The learning process is the core of educational activities. Learning is a process of interaction between individuals and their environment. Learning does not merely respond to stimuli but emphasizes the activeness of students in acquiring knowledge. Learning outcomes can only be obtained if the students are active in the process of learning. The learning process is not only result-oriented (by-product) but also process (by process). Through this active learning process, there will be no learning loss in the learning process.

The level of student activity in learning depends a lot on the teacher's ability to carry out the learning process (Akiri, 2013; Rasyad et al., 2029]. Teaching methods that result in the students only sitting, listening, taking notes, memorizing, or even just following the class do not provide opportunities for students to develop their skills optimally. Especially with the online learning process because of the COVID-19 pandemic, it is suspected that the students have become passive and experienced learning loss, namely the loss of learning outcomes, such as knowledge, attitudes, and skills. Therefore, to promote active students in the learning process, one of the most effective strategies is improving the teacher's teaching quality.

Literature Review

In general, there are two strategies to improve teachers' teaching skills, namely pre-service and in-service education. Of the two strategies, the most effective is through in-service education. One of the most effective strategies for implementing in-service education is instructional supervision.

So far, many instructional supervision activities have been carried out, but the results are suspected to be less effective. The results of the research by Wiyono et al. showed that of the 25 supervision techniques, only eight techniques had a significant positive correlation with the teaching performance of teachers [Wiyono et al., 2017]. For this reason, it is necessary to find effective instructional supervision techniques to improve teachers' teaching abilities. When it was examined, so far, most of the supervision carried out is through supervision from above, namely coaching from the school principal or school supervisor, or participating in training, upgrading, and other activities, which are essentially also supervisory programs from above. Meanwhile, collegial supervision has not been further studied. This research was carried out based on the background of the study.

The subject-teacher meeting is collegial supervision. The Subject Teacher Meeting (STM), which in Indonesia is mentioned as Musyawarah Guru Mata Pelajaran (MGMP), aims to unite views on the problems faced, especially those concerning teaching and learning activities, then jointly seek solutions, train teachers to express opinions, think critically, listen to the opinions of others, and foster teach-er initiative and creativity. The purpose of the STM is primarily to improve the teachers' professional abilities by utilizing their potential skills. The functions of the STM are (a) determining and solving problems encountered in the teaching and learning process, (b) compiling a learning time allocation program according to the educational calendar, (c) preparing teaching preparations, (d) deter-mining learning materials and resources, (e) determining the subject matter contained in the curriculum, (f) providing teaching aids, (g) carrying out the teaching and learning process, (g) assessing student learning outcomes, (h) serving students according to their characteristics and abilities, (i) and establishing uniformity of problem-solving activities to advance education in schools [Wiyono & Triwiyanto, 2018].

Based on the supervision theory, the STM is collegial supervision. Instructional supervision can be classified into three, namely intensive development, cooperative development, and self-directed development [Glatthorn, 1997]. Intensive development is a form of development that refers to clinical supervision, where supervisors intensively guide supervisees. Cooperative development refers to collegial supervision, namely carrying out development through sharing with fellow supervisees, while self-directed development refers to supervision of independent development types. This collegial development is very effective for increasing teacher competence because teachers will feel free to express their ideas, maximize interaction, and also provide input to each other. The existence of activeness and interaction in the development process can increase the effectiveness of the results. Several research results show that collegial supervision is very effective in increasing teacher competence [Wiyono et al., 2021].

Subject teacher meetings activities are generally carried out through three stages, namely the stage of planning or program development, the stage of program implementation, and the stage of program evaluation.

Planning is an activity process to formulate an activity program to be implemented to achieve the goal. The activity of compiling a program is an attempt to develop a series of activities to be carried out to achieve the goal. This activity always begins with planning activities, namely carefully thinking and formulating all aspects related to the activities to be prepared. Formulating what will be carried out, how to carry it out, who will carry it out, and when and where to carry it out are all a series of planning activities. The planning activities are then formulated in the form of a program.

Some of the main activities that need to be carried out in planning the STM activity program are the preparation of lesson plans, the practice of developing media and learning materials, group discussions, teaching simulations, and delivery of material. The activity planning is formulated in the form of an STM activity program. In compiling the program, it is necessary to involve a lot of teachers and a good division of tasks so that a good program can be arranged.

After successfully compiling the program, the next step is to implement the program. Implementing the program is carrying out all the activities that have been prepared. If the program has determined the activity of preparing a lesson plan, then realizing it is carrying out the lesson plan preparation activity. If the program determines discussion activities, then realizing it is carrying out discussion activities. Implementation is carried out according to plan. For this reason, it is necessary to coordinate all activities that have been carried out.

Evaluation is a systematic process to determine the extent to which the stated program objectives can be achieved. Evaluation is a process that is carried out through certain stages, starting from the activities of formulating goals, selecting instruments, compiling instruments, implementing, processing, and concluding the results of the evaluation and follow-up. The results of these evaluation activities are used to improve the activities that have been carried out.

The STM is thought to be very effective in increasing teachers' teaching competence, including collegial supervision. Several research results showed that collegial supervision is very effective in increasing teachers' teaching competence [Humphrey et al., 1972; Maisyaroh et al., 2021]. However, this still requires an in-depth study. The research results of Wiyono et al. on teacher work group meetings show a significant effect. However, the aspects that make a dominant contribution to the teacher's teaching performance have not yet been studied in depth. [Wiyono et al, 2017]. Supervision techniques that emphasize active learning and interaction have been shown to have an effect on teacher performance [Wiyono et al., 2021; Maor et al., 2016]. Likewise, instructional supervision supported by information and communication technology is effective in improving teachers' teaching competence [Samawi et al., 2019; Alfian et al.,

2019; Kopcha & Alger, 2011]. The results of Wiyono's research on teacher development also show that coaching based on the determinants of teacher performance is effective in improving a teacher's teaching competence [Liu et al., 2018]. However, the STM program has not yet been studied. Therefore, this study will be studied in depth. How the program of activities is carried out and how high its influence on the teacher's teaching performance still remains a question.

Research Objectives

Regarding the background of the study, the purpose of this study is to examine the effect of subject-teacher meetings on the quality of the teacher-learning process and student-learning outcomes. Particularly, the purpose of this study is to examine the effect of the activities in the STM, which include the activities of preparing lesson plans, developing instructional media, teaching simulations, group discussions, developing learning materials, and delivering materials on teacher's teaching quality, and student's learning outcomes, both directly or indirectly.

The formulation of the problems in this study are: (1) does the STM affect the teaching quality of teachers, (2) does the STM affect student learning outcomes, and (3) does the teacher's teaching quality affect student learning outcomes. The research hypotheses that will be tested in this study are: (1) there is a positive effect of STM activities on teacher's teaching quality, there is a significant positive effect of STM activities on student learning outcomes, and (3) there is a significant positive effect of teacher's teaching quality on student learning outcomes.

Methods

This research is for the first year of exploration using an explanatory research design [Johnson & Christensen, 2019; Mertens, 2019], intending to explore the implementation of the Subject Teacher Meeting activity program and testing the structural influence of exogenous and endogenous variables, namely STM activities on the teacher's teaching quality and students' learning outcomes.

Participant

This research was conducted in East Java. Considering the characteristics of the population, two cities were taken as research samples through random sampling techniques, namely Tulungagung and Sidoarjo Regencies. Taking into account the characteristics of the population, the first phase of analysis employs 112 teachers as a sample using a cluster random sampling technique. According to the characteristics of the population, in terms of gender, it consists of 69.6% women and 30.4% men. Looking at the length of service, 38.4% had a work period of 1-10 years, 53.6% had a work period of 11-20 years, and 8.0% had more than 20 years. Besides the teacher, it also involves the students as participants. The value of student learning outcomes is taken from the average value of each teacher's class. Thus, the teacher sample is complemented by a student sample of 112 classes, which has 3360 students.

Data Collection Instrument

Data collection techniques using questionnaires and documentation. The research instrument was developed based on the construct of the research variable. Three instruments were developed in this study to measure the frequency of teachers participating in STM programs, consisting of 28 items that can be classified into three dimensions, namely planning, implementation, and evaluation of the Subject-Teacher Meeting. Quality of teaching can be divided into three steps, namely planning, implementation, and evaluation of the instruction. Lesson planning consists of 20 items,

learning implementation consists of 22 items, and learning evaluation consists of 6 items. The student learning outcomes consist of 4 items, namely knowledge, psychomotor, affective, and achievement. The form of instruments developed was a closed questionnaire in the form of observed behavior scales and open questionnaires. The instruments were tested empirically to obtain good validity and reliability. Reliability estimation was carried out using Cronbach's Alpha formula and linear combinations, while the validity of the instrument was tested using factor analysis [Johnson & Christensen].

The results of the instrument's test analysis show that each instrument has a total coefficient of $r > 0.3$. Meanwhile, the Cronbach Alpha reliability value was obtained > 0.7. Thus, it can be concluded that the research instrument meets the criteria of good validity and reliability. The description of the research instrument is presented in the appendix.

Data Analysis Technique

Data analysis techniques were carried out using descriptive statistics, factor analysis, structural equation modeling, and qualitative data analysis techniques. Several descriptive analysis techniques used are frequency distribution, mean, standard deviation, and percentage. Classical assumption test used the Kolmogorov-Smirnov analysis technique to test the normality of the data, and test the linearity of the data. Descriptive statistics are used to describe data on exogenous and endogenous variables. SEM is employed to examine the structural influence of the variable influence of Subject Teacher Meeting techniques (STM) on the teacher's learning process and student learning outcomes.

Results

Description of the Research Results

Before testing the research hypothesis, a description of the results of each variable is presented. The first variable is the frequency of subject-teacher meeting activities, the second is about the teacher's teaching quality, and the third is about student learning outcomes. The results of the analysis of the frequency of subject-teacher meetings are presented in Figure 1.

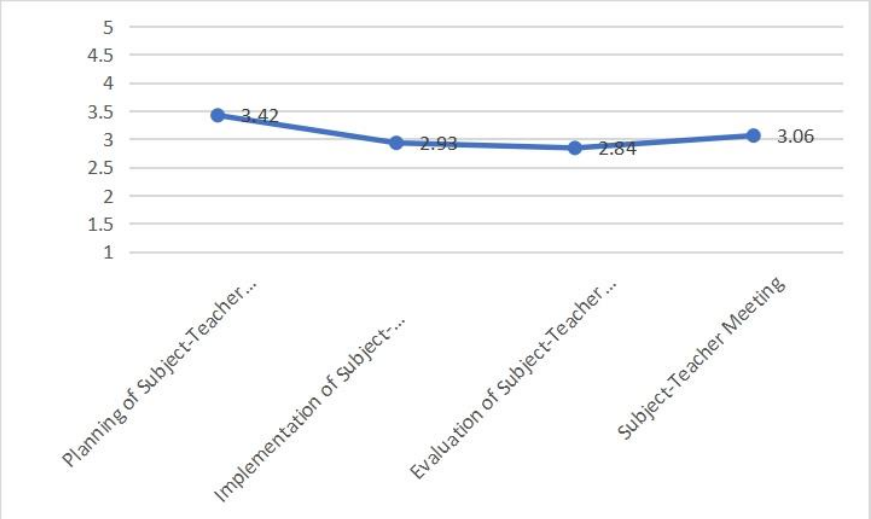

Figure 1: Teacher Involvement in the Subject-Teacher Meeting

Based on Figure 1, it can be seen that the average teacher participates in planning Subject-Teacher Meeting activities at 3.42, implementation at 2.93, evaluation at 2.84,

and overall of 3.06. If it is included in the specified criteria, it is included in the sufficient category. When examined per type of activity held at the Subject Teacher Meeting, an outline is presented in Figure 2.

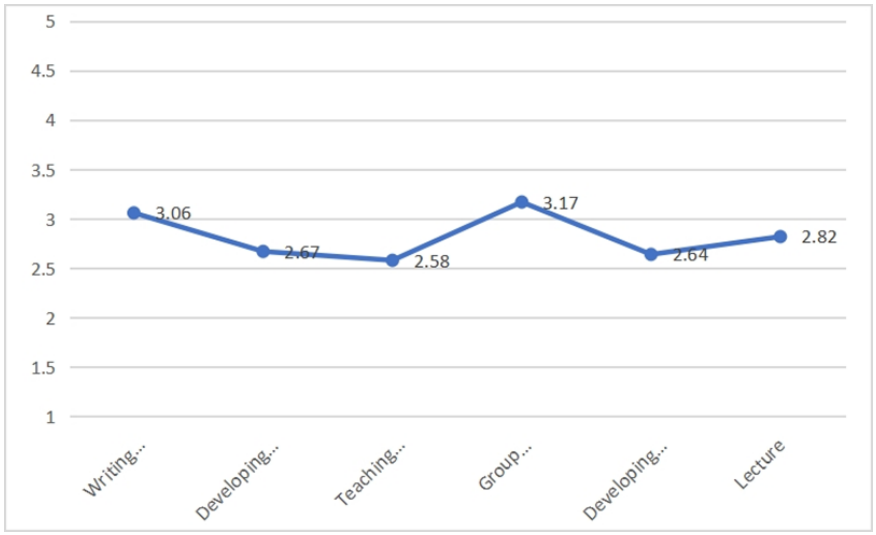

Figure 2: Average Frequency of Teachers Participating in Subject-Teacher Meeting Activities

Based on Figure 2, it can be underlined that generally, the teacher's involvement in the Subject-Teacher Meeting activities is in the moderate category. When it is viewed from the scores obtained, the highest was group discussion activities, followed by writing a lesson plan, lectures, developing instructional media and materials, and finally teaching simulation. The average quality of teaching is vividly presented in Figure 3.

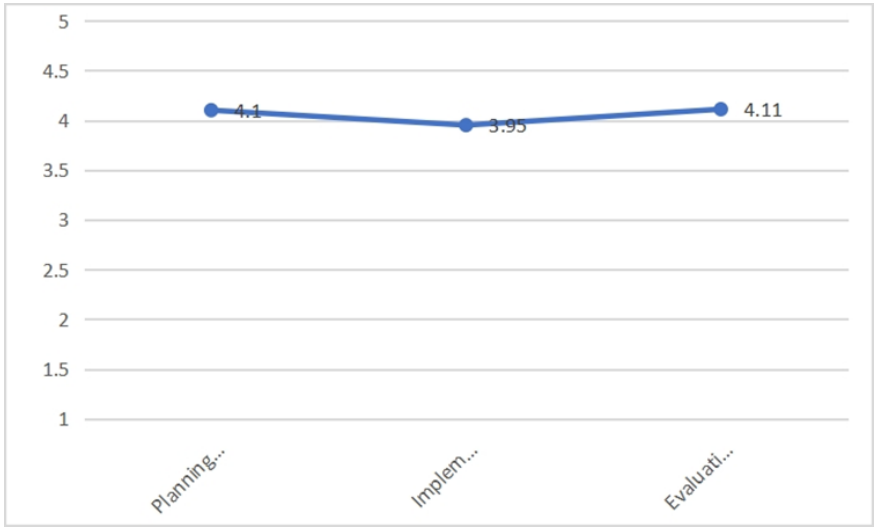

Figure 3: Average of Teacher's Teaching Quality

Looking at Figure 3, it appears that the average quality of a teacher's teaching planning is 4.1, the learning implementation is 3.95, and the learning evaluation is 4.11. If it is included in the specified criteria, it is included in the good category. The average student learning outcomes are broadly presented in Figure 4.

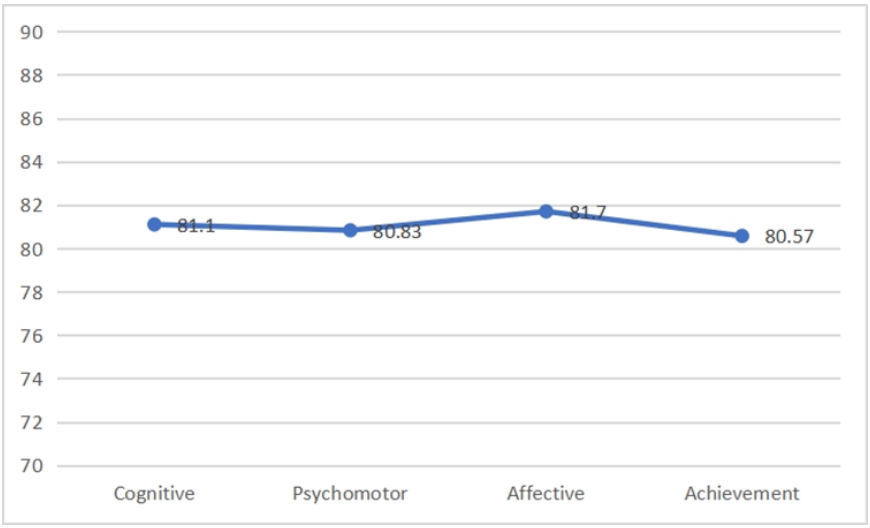

Figure 4: The Average of Student Learning Outcomes

Based on Figure 4, it can be underlined that the average student learning outcomes in the cognitive, psychomotor, affective, or overall aspects are in a good category. Furthermore, testing the research hypothesis was carried out.

The Influence of the Management of the Subject Teacher Meeting Program (STM on the Teacher's Teaching Quality and Student's Learning Outcomes

Following the theoretical basis, the management of the Subject Teacher Meeting Program (STM) consists of three activity indicators, namely planning, implementing, and evaluating the STM activity program. The teacher's teaching quality is also viewed from the non-component, namely planning, implementation, and evaluation of teacher learning. At the same time, students' learning outcomes are also reviewed from four types, namely learning outcomes of knowledge, attitudes, skills, and overall.

After the data collection process has been completed, data analysis is then carried out. The results of the analysis are generally presented in Figure 5.

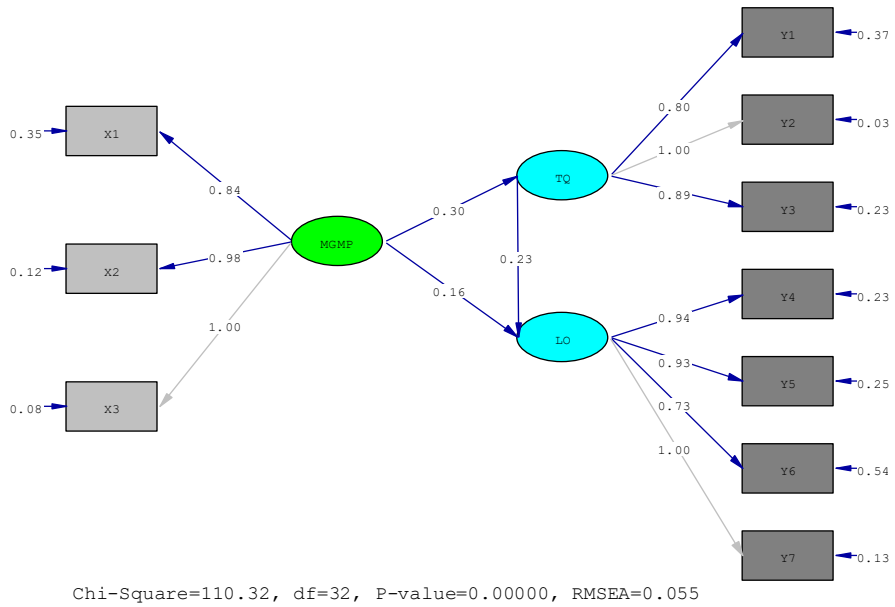

Figure 5. Structural Influence of STM on Teacher's Teaching Quality and Student's Learning Outcomes

Explanation

STM = Subject Teacher Meeting (STM)

X1 = Planning of STM

X2 = Implementation of STM

X3 = Evaluation of STM

TQ = teacher's teaching quality

Y1 = Teaching Planning

Y2 = teaching Implementation

Y3 = Teaching evaluation

LO = learning outcomes

Y4 = Cognitive learning outcomes

Y5 = Skill learning outcomes

Y6 = Attitude learning outcomes

Y7 = Overall learning outcomes

Based on Figure 5, it can be underlined that the Subject Teacher Meeting program has a significant effect on teachers' teaching quality and students' learning outcomes. From the results of the analysis, the Goodness of Fit Index (GFI) = 0.973, the Adjusted Goodness of Fit Index (AGFI) = 0.954, and the Normed Fit Index (NFI) = 0.983 and the Non-Normed Fit Index (NNFI) = 0.983. All is above 0.9, so it can be concluded that the proposed hypothetical model fits with the empirical model. This is also supported by the results of the analysis of the Root Mean Square Error of Approximation (RMSEA) = 0.0555, which shows a value of <0.08. Thus, it can be concluded that the null hypothesis is rejected, and the working hypothesis is accepted, and there is a structural influence of the STM on teachers' teaching quality and students' learning outcomes.

If it is looked at the coefficient value, teacher involvement in the STM has a direct effect on the teacher's teaching quality, with a coefficient of 0.30, and the teacher's teaching quality has a direct effect on the student's learning outcomes, with a coefficient of 0.23. Teacher activity in the STM also has a direct effect on the student's learning outcomes, with a coefficient of 0.16.

If it is viewed from the measurement model, each dimension also shows a fairly high lambda value. For the STM variable, X1 = 0.807, X2 = 0.940, and X3 = 0.960 are obtained. The three dimensions show high coefficients, it can be concluded that they show good validity; the three components are indeed STM variable dimensions. Teaching quality also showed similar results, namely Y1 = 0.794, Y2 = 0.986, and Y3 = 0.876. This shows that the three components are various dimensions of teaching quality. The learning outcomes variable also shows the same results, namely Y4 = 0.880, Y5 = 0.867, Y6 = 0.681, and Y7 = 0.932. This shows that the three components are the variable dimensions of learning outcomes.

The Influence of the Subject-Teacher Meeting Program (STM) on the Teacher's Teaching Quality

Based on the theory and regulations concerning the Subject Teacher Meeting (STM), there are several activity programs implemented in the STM. These main activities, in general, can be classified into six activities, namely preparing lesson plans, developing learning media, teaching simulations, group discussions, developing learning materials, and delivering material. Based on the results of data analysis, the coefficient of influence of program activities for preparing lesson plans, developing learning media, teaching

simulations, group discussions, developing learning materials, and delivering material is vividly presented in Figure 6.

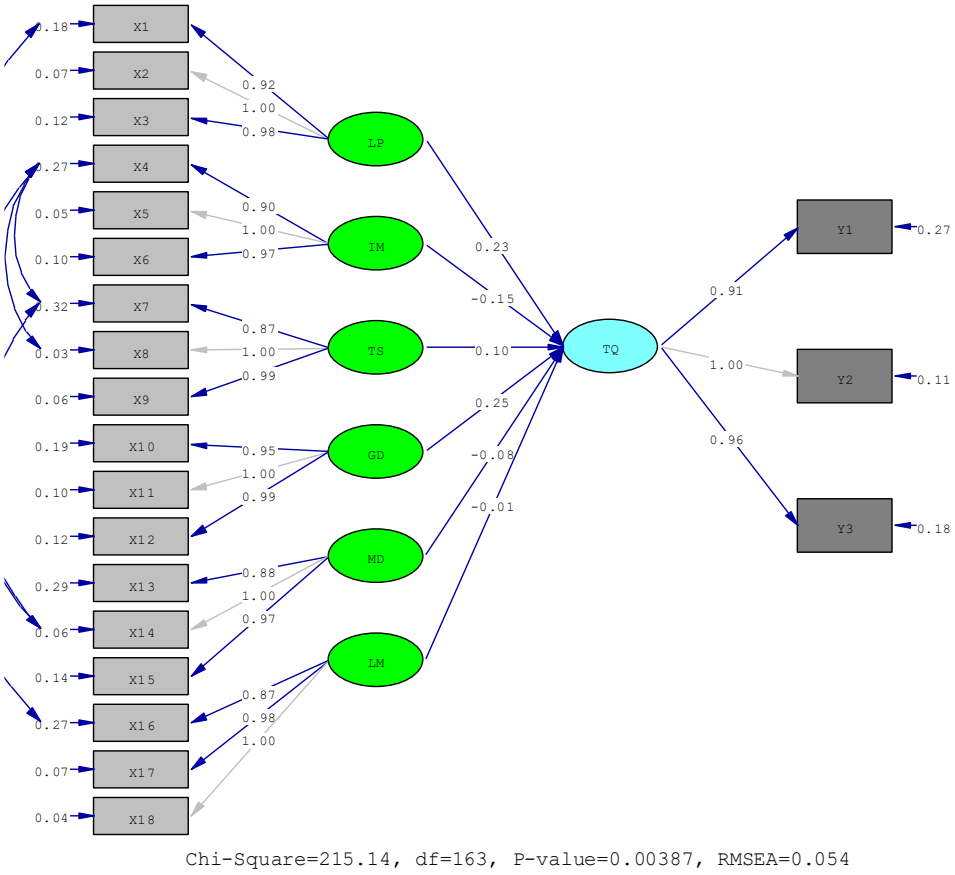

Figure 6: Influence of the STM Activity Program on Teacher's Teaching Quality

Explanation

LP = Lesson Plan preparation activity program

X1 = planning of lesson plan preparation activities

X2 = implementation of lesson plan preparation activities

X3 = evaluation of lesson plan preparation activities

IM = Instructional Media development activity program

X4 = planning of learning media development

X5 = implementation of learning media development

X6 = evaluation of learning media development

TS = Teaching Simulation activity program

X7 = planning of teaching simulation activity

X8 = implementation of teaching simulation activity

X9 = evaluation of teaching simulation activity

GD = Group Discussion activity program

X10 = planning of group discussion activity

X11 = implementation of group discussion activity

X12 = evaluation of group discussion activity

MD = Material Delivery activity program

X13 = planning of lesson plan preparation activity

X14 = implementation of lesson plan preparation activity

X15 = evaluation of lesson plan preparation activity

LM = Learning Material development activity program

X16 = planning of learning material development activity

X17 = implementation of learning material development activity

X18 = evaluation of learning material development activity

TQ = teacher's teaching Quality

Y1 = Teaching planning

Y2 = teaching implementation

Y3 = Teaching evaluation

Based on Figure 6, it can be underlined that the Subject Teacher Meeting activity program has a significant influence on teachers' teaching quality. From the results of the analysis, the Goodness of Fit Index (GFI) = 0.844, the Adjusted Goodness of Fit Index (AGFI) = 0.779, and the Normed Fit Index (NFI) = 0.923 and the Non-Normed Fit Index (NNFI) = 0.965. All high coefficients are close to or even exceed 0.9, so it can be concluded that the proposed hypothetical model is fitted with the empirical model. This is also supported by the results of the analysis of the Root Mean Square Error of Approximation (RMSEA) = 0.0537, which shows a value of <0.08. Thus, it can be concluded that the null hypothesis is rejected, the working hypothesis is accepted, and there is an influence of STM activities on teachers' teaching quality.

If it is viewed per activity component, there are differences between one activity and another. According to the plan, six activities can be seen, namely the preparation of learning implementation plans, development of learning media, teaching simulations, group discussions, delivery of materials, and development of learning materials. Based on the results of the analysis, the coefficient of the effect of the preparation of Learning Implementation Plan (RPP) activities on the quality of teaching is 0.240, learning media development activities are -0.155, teaching simulation activities are 0.103, group discussions are 0.252, material delivery activities are -0.082, and learning material development activities obtained a value of -0.006. Hence, it can be concluded that the six activities that show a positive influence are group discussion activities, preparation of learning implementation plans, and teaching simulations. Those that do not show a positive influence are the activities of developing learning media, developing learning materials, and delivering material.

If it is viewed from the measurement model, each variable also shows a fairly high lambda value. For the variable of preparing the lesson plan, X1 = 0.903, X2 = 0.963, and X3 = 0.940. The three dimensions show a high coefficient, so it can be concluded that they show good validity. The three components are indeed the variable dimensions of the implementation of learning preparation activities.

For the activity of learning media development variables, X1 = 0.858, X2 = 0.973, and X3 = 0.949. The three dimensions show a high coefficient, so it can be concluded that they show good validity. The three components are indeed the variable dimensions of learning media development activities.

For the variables of teaching simulation activities, X1 = 0.833, X2 = 0.984, and X3 = 0.972. The three dimensions show a high coefficient, so it can be concluded that they

show good validity. The three components are indeed the variable dimensions of teaching simulation activities.

For the variables of group discussion activities, X1 = 0.899, X2 = 0.951, and X3 = 0.937 were obtained. The three dimensions show a high coefficient, so it can be concluded that they show good validity; the three components are indeed variable dimensions of group discussion activities.

For the variable of material delivery activities, X1 = 0.844, X2 = 0.969, and X3 = 0.926 are obtained. The three dimensions show a high coefficient, so it can be concluded that they show good validity; the three components are indeed variable dimensions of material delivery activities.

For the variable of development of learning materials activities, X1 = 0.855, X2 = 0.962, and X3 = 0.982 are obtained. The three dimensions show a high coefficient, so it can be concluded that they show good validity. The three components are indeed variable dimensions of learning material development activities. The quality of teaching also shows similar results, namely Y1 = 0.857, Y2 = 0.942, and Y3 = 0.907. This shows that the three components are various dimensions of teaching quality.

The Influence of the Subject-Teacher Meeting Program (STM) on Students' Learning Outcomes

Besides looking at its effect on the teachers' teaching quality, the Subject Teacher Meeting (STM) also looked at its effect on the students' learning outcomes. This influence is also seen in all activities, namely the preparation of lesson plans, development of learning media, teaching simulations, group discussions, development of learning materials, and delivery of materials. Based on the results of data analysis, the coefficient of influence of program activities for preparing lesson plans, developing learning media, teaching simulations, group discussions, developing learning materials, and delivering materials on student learning outcomes is presented in Figure 7.

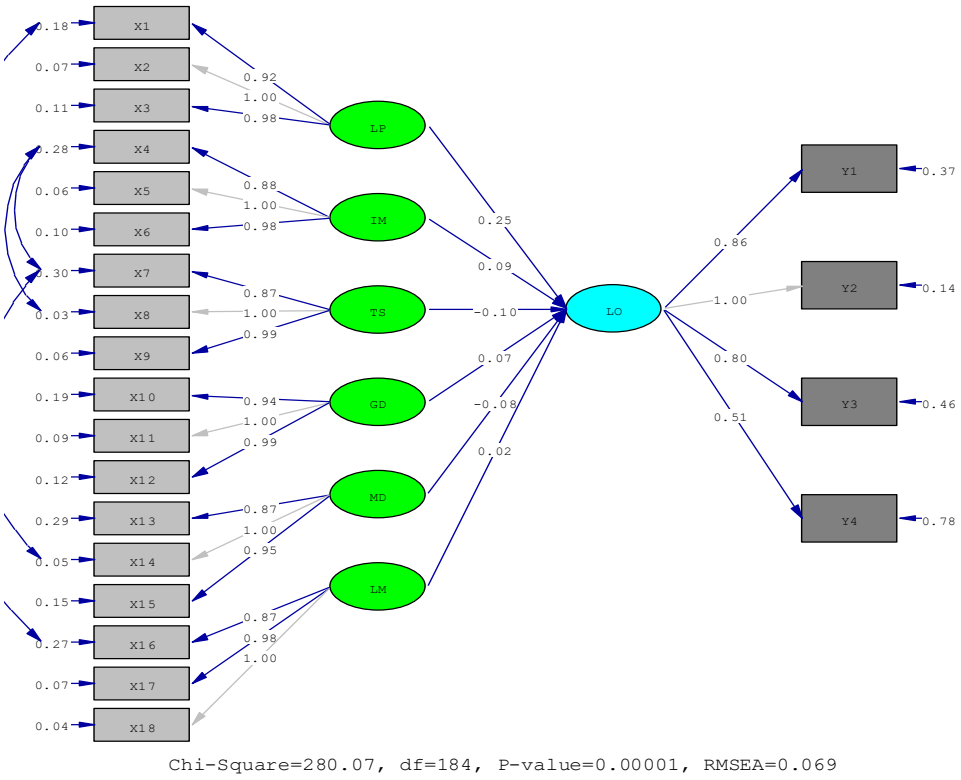

Figure 7: Effect of the STM Activity Program on Students' Learning Outcomes

Explanation

LP = Lesson Plan preparation activity program
X1 = planning of lesson plan preparation activity
X2 = implementation of lesson plan preparation activity
X3 = evaluation of lesson plan preparation activity
IM = Instructional Media development activity program
X4 = planning of learning media development activity
X5 = implementation of learning media development activity
X6 = evaluation of learning media development activity
TS = Teaching Simulation activity program
X7 = planning of teaching simulation
X8 = implementation of teaching simulation
X9 = evaluation of teaching simulation
GD = Group Discussion activity program
X10 = planning of group discussion activity
X11 = implementation of group discussion activity
X12 = Evaluation group discussion activity
MD = Material Delivery activity program
X13 = planning of lesson plan preparation activity
X14 = implementation of lesson plan preparation activity
X15 = evaluation of lesson plan preparation activity
LM = Learning Material development activity program
X16 = planning of learning material development activity
X17 = implementation of learning material development activity
X18 = evaluation of learning material development activity
LO = Students' Learning Outcomes
Y1 = Cognitive learning outcomes
Y2 = Affective learning outcomes
Y3 = Psychomotor learning outcomes
Y4 = Overall learning outcomes

Based on Figure 7, it can be underlined that the Subject Teacher Meeting activity program has a significant influence on students' learning outcomes. From the results of the analysis, the value of the Goodness of Fit Index (GFI) = 0.813, the value of the Adjusted Goodness of Fit Index (AGFI) = 0.743, and the Normed Fit Index (NFI) = 0.897 and the Non-Normed Fit Index (NNFI) = 0.940. All high coefficients are close to or even exceed 0.9, so it can be concluded that the proposed hypothetical model fits with the empirical model. This is also supported by the results of the analysis of the Root Mean Square Error of Approximation (RMSEA) = 0.068, which shows a value of <0.08. Thus, it can be concluded that the null hypothesis is rejected, the working hypothesis is accepted, and there is an influence of STM activities on students' learning outcomes.

When it is viewed per activity component, there are differences between one activity and another. According to the plan, six activities can be seen, namely the preparation of learning implementation plans, development of learning media, teaching simulations, group discussions, delivery of materials, and development of learning materials.

Based on the results of the analysis, the coefficient of the influence of the Lesson Plan (RPP) Preparation activities on students' learning outcomes obtained a value of 0.250, learning media development activities were obtained at 0.090, teaching simulation activities were obtained at -0.103, group discussions were 0.067, material delivery activities were -0.083 and learning material development activities obtained a value of 0.015.

When it is examined further, only the activity of preparing a lesson plan that has a dominant positive influence on students' learning outcomes. Thus, it can be concluded that of the six activities, the activity of preparing a lesson plan shows a strong positive influence. While other activities, namely teaching simulations, learning media development activities, group discussions developing learning materials, and delivery of material does not have a strong direct influence on students' learning outcomes. For this reason, it is necessary to look at the teacher's teaching influence on students' learning outcomes.

When it is looked at from the measurement model, learning outcomes also show a fairly high lambda value. For learning outcome variables, Y1 = 0.793, Y2 = 0.925, and Y3 = 0.736, and Y4 = 0.469 are obtained. The four dimensions show a high coefficient, and it can be concluded that they show good validity. The three components are indeed variable dimensions of students' learning outcomes.

The Effect of Teacher's Teaching Quality on Students' Learning Outcomes

Based on the results of the analysis, it can be underlined that the activities in the STM do not have a strong effect on students' learning outcomes. Of the six activities, only the activity of preparing lesson plans had a strong enough effect on the student's learning outcomes, while the others, namely the development of instructional media, teaching simulations, group discussions, developing learning materials, and delivery of material had a less strong effect on student learning outcomes. For this reason, it is necessary to study further the effect of teachers' teaching quality on students' learning outcomes. Based on the results of data analysis, the influence coefficient of a teacher's teaching quality on students' learning outcomes is presented in Figure 8.

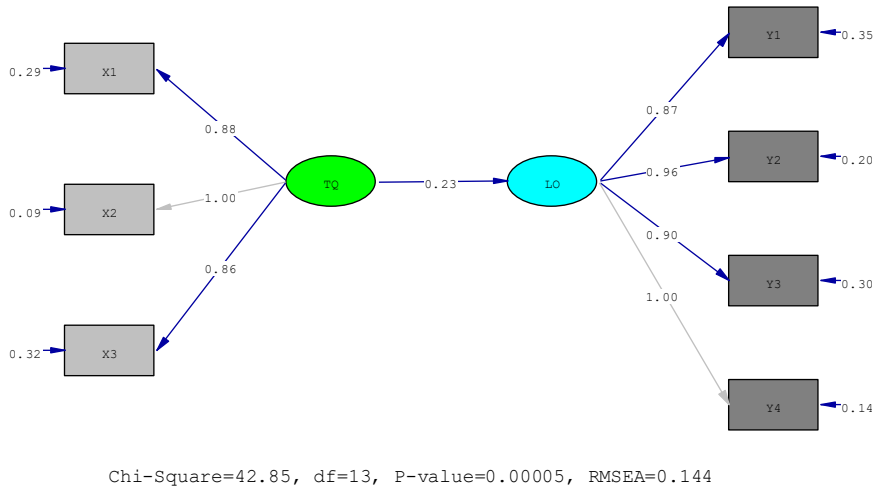

Figure 8. The Influence of Teacher's Teaching Quality on Students' Learning Outcomes

Explanation

TQ = teacher's teaching Quality

X1 = Learning planning

X2 = Learning implementation

X3 = Learning evaluation

LO = Students' learning Outcomes

Y1 = Cognitive learning outcomes

Y2 = Affective learning outcomes

Y3 = Psychomotor learning outcomes

Y4 = Overall learning outcomes

Based on Figure 8, it can be underlined that the Subject Teacher Meeting program has a significant effect on students' learning outcomes. From the results of the analysis, the value of the Goodness of Fit Index (GFI) = 0.901, and the value of the Adjusted Goodness of Fit Index (AGFI) = 0.781, as well as the Normed Fit Index (NFI) = 0.917 and the Non-Normed Fit Index (NNFI) = 0.897. All high coefficients are close to or even exceed 0.9, so it can be concluded that the proposed hypothetical model fits with the empirical model. Thus, it can be concluded that the null hypothesis is rejected, and the working hypothesis is accepted: the teacher's teaching quality affects students' learning outcomes.

Discussion and Conclusion

Discussion

Based on the results of the analysis that was carried out in this study, it was found that the subject-teacher meeting activity program had a significant influence on the teachers' teaching quality and students' learning outcomes. Subject-teacher meeting (STM) is a forum for teachers in each subject to gather and exchange information to increase the professionalism of teacher work (Bayrakcı, 2009; Cappella et al., 2012; McGlothlin, 1981; White & Poteat, 1983). With a forum for exchanging information, the material taught by each teacher can be standardized and will avoid misunderstandings in teaching. STM activities can also improve teachers' teaching abilities by sharing models, methods, approaches, and learning media among subject teachers. (Emaliana, 2019; Emiliasari, 2018; Fatmawati et al., 2020; Gunawan & Asrifan, 2020; Santiana et al., 2021). In addition, discussion forums can also solve problems that occur during the learning process. Teachers can share problems and also solve problems that have been implemented.

Activities in the STM program also include an analysis of the curriculum that is being used (Anwar, 2011; Imelda, 2023). This analysis will discuss the application to the problems that arise and also solutions to the problems in implementing the curriculum. This analysis is very useful for teachers because the curriculum is the teacher's main reference in teaching (Anwar, 2011; Imelda, 2023). With this activity, the teacher will have an identical and holistic understanding related to curriculum implementation. A good understanding of the curriculum will improve teachers' teaching quality.

Concerning the preparation of learning tools, STM activities can help teachers prepare good learning tools since the meeting program provides discussion on making devices such as lesson plans, syllabi, teaching materials, and learning media. The discussion will bring together some of the teachers' ideas so that they can make better learning tools compared to learning tools that are made independently. In making learning media, this

activity will make it easier for teachers to prepare media that is more interesting and interactive. In this meeting, the teacher can share the media that has been developed and develop better learning media together.

Discussions conducted in the STM also include mastery of the material for each teacher. This will strengthen the professional competence of teachers, which requires mastering teaching materials well and deeply. The teacher's ability to master this material will result in a better teaching and learning process. Some of the advantages of STM activities are that this activity can improve the teacher's teaching quality and students' learning outcomes.

Comprehensively, the main findings of this study indicate that teacher involvement in subject-teacher meetings influences teachers' teaching quality. The findings of this study support some of the findings of previous studies that collegial supervision has a significant effect on the teacher's teaching quality [Wiyono et al., 2021; Xie et al., 2023; Saunders et al., 2023]. Subject-teacher meetings are a form of collegial supervision that is mostly carried out by teachers. Through these activities, the activity and interaction between teachers increases. Activeness and interaction between teachers are the two main aspects that determine the increase in teachers' teaching competence. Of the three approaches, namely development, collegial development, and independent development, collegial development is the most teachers' favorite supervisory approach, so it can improve teacher competence effectively [Wiyono, 2021; Xie et al., 2023; Saunders et al., 2023]. Through teacher meetings, teachers can also increase their understanding of the problems they face so they can improve themselves [Wiyono et al., 2021; 2014; Purwoko et al., 2017].

The second main finding shows that teacher involvement in subject-teacher meetings has a significant effect on student learning outcomes. The findings of this study are related to the results of previous studies that directly involve teachers in subject-teacher meetings and affect student learning outcomes, both directly and indirectly. Through activities in STM meetings, the quality of teaching of the teachers has improved. Increasing teachers' competencies and attributes can improve their performance [Wiyono et al., 2021; Sucipto et al., 2021]. Increasing the teacher's teaching quality can improve student learning outcomes.

When examined more deeply, teaching strategies, teaching styles, methods, and the quality of other teacher teaching components influence student learning outcomes [Cordero & Gil-Izquirdo, 2028; Inayat & Ali, 2020. The quality of teacher teaching also influences student attitudes and behavior [Blazar & Kraft, 2017]. By increasing the quality of teachers' teaching components, student learning outcomes can be improved. However, from several previous research results, there are components that influence learning outcomes, and there are other teaching components that influence students' attitudes, motivation, or behavior. Further research can be carried out to obtain more specific findings. This is a recommendation in this research.

Conclusion

Teacher involvement in subject-teacher meeting activities (STM) affects the teacher's teaching quality. The higher the teacher's involvement in STM activities, the higher the quality of teacher learning. Teacher involvement in subject-teacher meeting activities (STM) influences students' learning outcomes, both directly and indirectly, through the quality of teacher learning. The higher the teacher's involvement in STM activities, the higher the quality of teacher learning, and in the end, it has an impact on increasing students' learning outcomes.

The activity of preparing lesson plans has a significant effect on the teacher's teaching quality. The higher the teacher's involvement in the preparation of lesson plans, the higher the teaching quality applied by the teacher. Learning media development activities

do not affect a teacher's teaching quality. Teaching simulation activities have a significant effect on teachers' teaching quality. The higher the teacher's involvement in teaching simulation activities, the higher the teacher's teaching quality. Group discussion activities have a significant effect on the quality of teacher teaching. The higher the teacher's involvement in group discussion activities, the higher the quality of teacher learning. Learning development activities do not affect the teacher's teaching quality. Material delivery activities do not significantly affect the teacher's teaching quality.

Considering the effect on students' learning outcomes, the lesson plan preparation activities have a direct effect on students' learning outcomes. The more involved the teacher is in the preparation of lesson plans, the higher the learning outcomes achieved by the students. Learning media development activities do not affect student learning outcomes. Teaching simulation activities do not directly affect students' learning outcomes. Group discussion activities do not directly affect students' learning outcomes. Learning development activities do not directly affect students' learning outcomes. Material delivery activities do not directly affect students' learning outcomes. Teachers' teaching quality has a direct effect on students' learning outcomes.

Based on the findings of this study, teachers should increase their activeness in participating in the subject-teacher meeting (STM). School principals, service heads, or other leaders should motivate and facilitate the teachers so that they can be active in participating in the subject-teacher meeting (STM). Through STM activities, the quality of teacher learning will increase, and by increasing the quality of teacher learning, it will improve students' learning outcomes. Not all STM activities affect improving the teacher's teaching quality and students' learning outcomes. Therefore, an effective program of STM activities should be selected. An activity program that encourages teacher activity and interaction has been proven to have a significant effect on the teacher's teaching quality.

This research is not the last, it is necessary to carry out further studies to obtain generalizations. Several substances that need to be examined further are the approach used in the STM, the STM implementation process, the coaching techniques used, and the principles and models of STM activities. The research method used would be better if using mixed methods.

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Conflicts of Interest

There is no potential conflict of interest in this research.

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