
Development of a training model to improve the managerial competence of Islamic boarding schools based on problem-based learning

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Abstract

This research aimed to develop a valid, practical, and effective problem-based learning-based managerial competency improvement training model for Islamic boarding school administrators. This research and development (R&D) research was developed using the ADDIE model, which consists of the stages of analysis, design, development, implementation, and evaluation. The instruments were interview sheets, needs analysis questionnaires, validity questionnaires, practicality questionnaires, and test instruments. The results showed that the validity test of the developed training model was in the valid category, with an average score of 0.91. The average scores of the practicality test given by the instructor and training participants were 90.00% and 90.72%, respectively, in the efficient category. The results of training activities showed an increase in the average test score of 40.77 points, with a moderate increase criterion. The effectiveness test with the N-Gain formula scored 0.65, with a fairly effective category. Additionally, the conclusion was that the problem-based learning-based managerial competency improvement training model for Islamic boarding school administrators is valid, practical, and quite effective.

Keywords

Islamic boarding school administrators, managerial competence, problem-based learning, training model

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Introduction

Islamic boarding schools are one of the Islamic educational institutions under the auspices of the Ministry of Religion. They are responsible for providing the best education for the Indonesian nation. Based on statistical data from the Ministry of Religion's Emis Islamic boarding school, every year, there is an increase in the number of Islamic boarding schools, with an average increase of up to 7% per year. At the beginning of the 2023/2024 academic year, there were 41.599 Islamic boarding schools in Indonesia; this number had increased significantly compared to 2015, when the number of Islamic boarding schools in Indonesia at that time was 28.961.

To provide high-quality education, the government, through Islamic Boarding School Law No. 18 of 2019, requires every Islamic boarding school to ensure the quality of its education through three key aspects: improving the quality and competitiveness of resources, strengthening management, and enhancing support for facilities and infrastructure. This quality improvement is significant because it is supported by the fact that an increase does not follow the increase in the number of Islamic boarding schools and students. Based on data from the Emis Islamic boarding school, there was a drastic decrease in the number of students from the 2022/2023 academic year to the 2023/2024 academic year, from 4.845.317 to 3.339.536 students. Until now, no in-depth study has explained the factors that caused the decrease in students. However, with the increasing climate of competition among educational institutions, serious efforts are needed from each Islamic boarding school to improve its education quality (Andari et al., 2022).

Danis et al. (2021) found that Islamic boarding schools are not optimal in managing human resources. In addition, Rusdiani (2022) found that Islamic boarding schools are not optimal in planning and organizing functions. Furthermore, Supriatna and Iqbal (2024) found that Islamic boarding schools are still constrained by financing problems, making development difficult. Adawiah and Zohriah (2024) found that Islamic boarding schools were not optimal in planning, organizing, implementing, and evaluating functions.

The root of the problem of the quality of Islamic boarding school education lies in the weak management of the Islamic boarding school (Rahman, 2016). The problem of Islamic boarding school management stems from the weak vision and mission carried by the Islamic boarding school. The vision and mission of the Islamic boarding school are usually only formulated by the leader of the Islamic boarding school without any clear direction for follow-up (Yahya, 2015). This weak vision and mission can be seen in several modern Islamic boarding schools prioritizing formal education over diniyah education, which is the main characteristic of Islamic boarding schools. Some modern Islamic boarding schools use ineffective traditional methods, so the same management problems occur repeatedly (Andari et al., 2022). Generally, Islamic boarding schools still adhere to a mono-management and mono-administration pattern where all policies are directly under the authority of the leader of the Islamic boarding school, so that there is no delegation of authority to work units. Although in Islamic boarding schools, there is a daily management body as the manager of activity units, in practice, the implementation of activities is still under the authority of the leadership of the Islamic boarding school (Andayani & Al Arsy, 2018).

Efforts to address the quality of Islamic boarding schools must begin with developing the managerial competence of Islamic boarding school administrators and establishing a basic management framework so that the implementation of education runs well (Kuswanto, 2021). One of the obstacles in Islamic boarding schools is the lack of understanding of Islamic boarding school leaders and managers of the scope, duties, and functions of management. Increasing this managerial competence is very important because of the significant influence of the managerial competence of Islamic boarding school leaders and managers on the quality of education (Badrun, 2024).

Training and coaching activities can improve Islamic boarding school administrators' knowledge and skills competency in the managerial field (Mu'is, 2021). However, in reality, training activities to improve the managerial competency of leaders and managers of Islamic boarding schools are minimal and rarely implemented. The training activities are often not up to expectations, and the activities' results do not impact performance improvement (Suharti, 2020).

Practical training activities are training where participants acquire specific knowledge, attitudes, and skills, and the participants enjoy the activities. To create practical training, training instructors must pay attention to the characteristics of the training participants and the methods used in the training activities. If the training participants have worked and have much work experience, the instructor must use training methods based on adult learning principles (Giu, 2021).

The administrator of the Islamic boarding school is a person who is given the task by the head of the Islamic boarding school to help manage the Islamic boarding school. The Islamic boarding school administrator is an adult with knowledge and work experience. Therefore, the training carried out for the administrator of the Islamic boarding school must be adjusted to the principles of adult learning. According to Malik (2008), the learning method in adult education aims to organize adults to carry out learning activities through theoretical and practical activities. The criteria for learning methods that can be used for adults must (1) be problem-centered, (2) require and encourage participants to be active, (3) encourage participants to express their daily experiences, (4) foster cooperation, both between participants and between participants and tutors, and (5) be more of an experience-giving nature, not a transformation or absorption of material.

One of the learning models that can be used in adult learning is the problem-based learning model. Problem-based learning is a model that encourages students to build knowledge through problem-solving. The theory of constructivist learning explains that the learning process occurs when someone faces a problem that is relevant to their life, which stimulates thinking skills. In problem-based learning, training participants can actively explore their potential, develop thinking skills, work together, and share experiences with fellow training participants (Nugraha et al., 2016).

Based on this, developing this training model is one of the solutions to help Islamic boarding school administrator improve their knowledge and understanding of managerial competence. This research aims to describe the needs of Islamic boarding school administrators for training models and to reveal the validity, practicality, and effectiveness of the training model for improving managerial competence based on problem-based learning that has been developed.

Literature Review

Training model

Training is an educational process carried out through organized and systematic procedures. According to Daniel (2018), training is a learning effort organized by an organization to meet the needs or achieve organizational goals. Said and Firman (2022) explained that training is a series of activities designed to improve a person's skills, abilities, knowledge, experience, or changes in attitude. Training is an effort to improve worker performance in a particular job that is currently their responsibility. In addition, Tudor (2015) revealed that training is a series of individual activities that systematically improve skills and knowledge so that they can perform professionally in their field. Training is a learning process that enables employees to carry out their current work according to standards. From the definitions above, training is a series of activities to improve knowledge, attitudes, and skills to carry out work effectively and efficiently according to organizational goals. The training focuses on activities to improve performance and provide direct experience in carrying out tasks.

A model is a description that contains the flow of an activity that is systematically arranged and used as a guide for an activity. The model contains steps for implementing an activity from start to finish (Mendrofa, 2021). A training model is an instructional design that describes the training implementation process. A training model is a design that describes the sequence of activities in a program. Pratomo and Syofwan (2022) explained that a training model is a form of training implementation that contains a training program and procedures for its implementation. Based on this explanation, it is concluded that a training model is a comprehensive description of the steps that must be taken in a training activity.

Islamic boarding school administrator

Based on the Islamic Boarding School Law No. 18 of 2019, Islamic boarding school administrators have the task and mandate to manage, organize, and implement program activities in Islamic boarding schools. Islamic boarding school administrators are tasked with planning, organizing, supervising, and evaluating all educational activities. An Islamic boarding school administrator must be able to utilize resources to realize the vision and mission of the Islamic boarding school (Suryana, 2024).

The administrator levels of Islamic boarding schools can be divided into three levels: top, middle, and lower-level administrators. *Kyai*, as top administrator, is tasked with determining targets and policies, providing guidance and direction, and determining performance standards. Senior *Ustad*, as a middle administrator, has the following tasks: interpreting and explaining top administrator policies, participating in making operational decisions, and training lower-level administrators. Meanwhile, as a lower-level administrator, junior *Ustad* has the task of planning daily, dividing tasks among members, supervising and controlling the activities of their subordinates, organizing materials, equipment, and supplies, and maintaining discipline (Bhanje, 2023).

Managerial competence

Competence is the human ability to behave in such a way as to meet job requirements within the parameters given by the organizational environment to achieve the required results. Managerial competence can also be defined as a set of technical skills in carrying out tasks as a manager to utilize all available resources to achieve goals effectively and efficiently (Bhardwaj & Punia, 2013). Managerial competence is the activity, knowledge, skills, attitudes, and possibly personal characteristics needed to improve management performance. Nikitina and Lapina (2019) explained that the ability in managerial competence can be in the form of knowledge, traits, attitudes, skills, experience, and socializing abilities. Managerial competence is a person's ability to carry out management functions and use all available resources to achieve goals effectively and efficiently.

In fulfilling the role of a manager or administrator, a person must have good managerial competence. Griffin and Moorhead (2014) classified managerial skills into four categories: conceptual, technical, interpersonal, and diagnostic. Effective leaders must possess these skills, but the managerial level determines which skills should be more dominant. If the managerial level increases, then he must increasingly master these managerial skills well. Managerial ethics are standards of behaviour that serve as guidelines for a manager in organizing an organization. Managerial ethics will influence a manager's mindset, policies, and actions. Managerial ethics are highly emphasized for a manager (leader) because a manager's ethics will positively impact others in the work environment. This view assumes that a manager has many roles, such as providing a good example to subordinates, mediating between subordinates if a conflict occurs, motivating subordinates to achieve organizational goals, etc.

Problem-based learning

Problem-based learning, commonly abbreviated as PBL, is a learning model designed so that students learn knowledge through several stages of scientific methods based on the problems presented, so that students are expected to be able to solve problems and have skills in solving problems (Yew & Goh, 2016). The concept of PBL learning is to find solutions to problems as a result of the thoughts and experiences of students. The philosophical basis of PBL is based on the theory of constructivist learning, namely by building a problem framework based on the topic of discussion, observing, collecting data, organizing problems, compiling facts, analyzing data, compiling arguments, and solving problems (Mendrofa, 2021).

The PBL model is carried out by providing stimuli in the form of problems, which are then asked to solve the problems. In training activities using the PBL model, training participants will be given various problems. Then, training participants are expected to analyze problems, diagnose problems, formulate alternatives/problem-solving strategies, determine and apply problem-solving strategies, and evaluate the problem-solving process.

De Graaf and Kolmos (2003) explained that the steps of the PBL model can vary according to the objectives and learning materials as long as they do not deviate from the basic procedures. The basic process of PBL consists of several steps: introduction and setting learning conditions, posing problems, confirming problems and compiling learning tasks,

collecting data for problem-solving, reconfirming problems and developing problem solutions, presenting solutions, and compiling learning outcomes and evaluations.

Methodology

Research design, site, and participants

The type of research used in this research is research and development (R&D). This research was designed using the ADDIE development model. The ADDIE model consists of 5 stages: analysis, design, development, implementation, and evaluation. This research was conducted at the Muallimin Muhammadiyah Sawah Dangka Islamic Boarding School. The subjects of this research were the managers of the Islamic boarding school, which consisted of the head of the madrasah, the head of the division, and members of the Islamic boarding school division.

Data collection and analysis

To collect the required data, the researcher used several methods, namely: (1) observation, (2) interview, (3) questionnaire, and (4) written test. The observation was carried out by directly observing everything related to the managerial competence of the Islamic boarding school administrators. Interviews were conducted with the Muallimin Muhammadiyah Sawah Dangka Islamic Boarding School administrator to determine the management problems. Questionnaires were given to analyse training needs, the level of instrument validity, product validity, and the practicality of the products developed. Written tests were carried out to determine the effectiveness of the training activities that had been carried out.

Validity analysis technique, the validity analysis technique is based on the validator's assessment of the statements in the validation questionnaire. Each statement in the questionnaire is assessed and then analyzed using Aiken's V formula below.

$$V = \frac{\sum s}{n(c-1)}$$
$$s = r - lo$$

Information :

lo = Lowest validation assessment score (e.g., 1)

c = Highest validation assessment score (e.g., 5)

r = score given by validator

n = number of validators

Based on the formula above, the validity results are obtained and adjusted to Aiken's V scale criteria in Table 1 below.

Table 1. *Validity assessment criteria for Aiken's V scale*

No	Aiken's V scale	Validity
1.	$V \leq 0.4$	Less
2.	$0.4 < V < 0.8$	Moderate
3.	$V \geq 0.8$	Valid

Practicality analysis technique, data for the practicality test were obtained by filling out a practicality questionnaire. The practicality test uses the following formula:

$$P = \frac{Q}{R} \times 100\%$$

Information :

P = Practicality score

Q = Score obtained

R = Highest score

Based on the formula above, the practical results are obtained and adjusted to the criteria in Table 2 below.

Table 2. *Practicality assessment criteria*

No	Score	Practicality
1.	$0\% < x \leq 20\%$	Not practical
2.	$20\% < x \leq 40\%$	Less practical
3.	$40\% < x \leq 60\%$	Quite practical
4.	$60\% < x \leq 80\%$	Practical
5.	$80\% < x \leq 100\%$	Very Practical

Effectiveness analysis technique, the effectiveness of the training model was evaluated using a one-group pre-test-post-test design.

$O_1 \times O_2$

Information :

O_1 = Pre-test score before attending training

O_2 = Post-test score after attending training

The pre-test and post-test results can then be analyzed using the N-Gain formula as follows:

$$N - \text{Gain} = \frac{\text{posttest score} - \text{pretest score}}{100 - \text{pretest score}}$$

The calculation results refer to the N-Gain value criteria explained by [Sukarelawan et al. \(2024\)](#) in Table 3 below.

Table 3. *N-Gain score criteria*

N – Gain	Criteria
$0.70 \leq g \leq 1.00$	High
$0.30 \leq g < 0.70$	Moderate
$0.00 < g < 0.3$	Low
$g = 0.00$	No increase
$-1.00 \leq g < 0.00$	Decrease

Table 4. *Criteria for determining the level of effectiveness*

Percentage	Criteria
< 40	Ineffective
40 - 55	Less effective
56 – 75	Quite effective
> 76	Effective

Findings

Training needs analysis

From interviews conducted with leaders and heads of Islamic boarding school divisions, it was found that there is still a lack of understanding regarding managerial roles and tasks, as well as the less-than-optimal implementation of planning, organizing, implementing, and monitoring functions. To determine the level of needs of Islamic boarding school administrator for material and sub-material indicators in training activities, the researcher gave a training needs analysis questionnaire to 14 respondents, including leaders and heads of Islamic boarding school divisions. The results of the training needs analysis questionnaire for improving the managerial competence of Islamic boarding school administrator based on problem-based learning can be seen in Table 5.

Table 5. *Data analysis of training needs to improve the managerial competence of the Islamic boarding school administrator*

No	Training material indicators	Percentage %	Criteria
1.	Managerial competency concept	100	Essential
2.	Planning function	100	Essential
3.	Organizing function	97.62	Essential
4.	Implementation function	100	Essential
5.	Supervision function	94.64	Essential

Table 5 shows that the training indicators for the concept of managerial competence, planning function, and implementation function received a percentage of 100%. The organizing function received a percentage of 97.62%, and the supervisory function received 94.64%. All managerial competence indicators met the criteria of essential. This shows that Islamic

boarding school administrators need training to understand the concept of managerial competence, planning, organizing, implementation, and supervisory functions.

Training model product validity test

The products produced in this research were tested for validity by experts before implementation. Based on the validation results by experts, the validation data were obtained as shown in Table 6 below.

Table 5. *Product model expert validation score*

No	Validation instrument	V	Criteria
1.	Validity model	0.91	Valid
2.	Validity of material	0.89	Valid
3.	Validity of guidelines	0.88	Valid
4.	Validity of product design	0.71	Sedang
5.	Validity of language	0.92	Valid

Practicality test of the training model

The practicality test was conducted to see whether the developed model could be applied in the field. The practicality test of the model was conducted in two stages, namely through small-group and large-group tests. The results of the practicality questionnaire given to the two test groups are in Tables 7 and 8 below:

Table 6. *Small group practicality test percentage*

No	Indicators	Percentage	Information
1.	Implementation of training	90	Very practical
2.	Product use	92.50	Very practical
3.	Benefits	96.67	Very practical

Table 8. *Large group practicality test percentage*

No	Indicators	Percentage	Information
1.	Implementation of training	87.94	Very practical
2.	Presentation of materials	91.43	Very practical
3.	Benefits	92.06	Very practical

Model effectiveness test

The model's effectiveness is determined by looking at the score results of the pre-test and post-test. Based on the tests that have been conducted, the results obtained are shown in the following Table 9.

Table 9. *Pre-test and post-test scores*

No	Test	Average score
1.	Pre-test	37.31
2.	Post-test	78.08

Based on the pre-test and post-test results, the average score for the pre-test was 37.31, and the post-test was 78.08. These results showed an increase in learning outcomes of 40.77 points. Furthermore, to see the effectiveness of the training model, data processing was carried out using the N-Gain equation, so that the results were obtained as shown in Table 10 below.

Table 7. *N-Gain effectiveness analysis*

Pre-test	Post-test	N-Gain	Increase	%N-Gain	Effectiveness
37.31	78.08	0.65	Moderate	65.03	Quite effective

Based on the results of the N-Gain analysis, the N-Gain score was 0.65. This score indicates that the average increase in learning outcomes in training activities is in the moderate category. From the analysis results, the N-Gain percentage value was 65.03%. This score indicates that the training activities are quite effective and should be implemented.

Discussions

In supporting the effectiveness of the training model, the development of the training model must be adjusted to the needs of the training participants. This is one of the principles of adult learning: that learners determine what they need to learn based on what they need. The training model that has been developed is then validated by experts. Based on the validity test, the results obtained show that the developed model is declared valid. This shows that the components of the developed training model have met one of the requirements for implementation.

The results of the practicality test of the two stages of training showed a percentage of practicality of 93.13 and 92.06. According to Akker et al. (1999), practicality is a measure that explains the extent to which the training model that has been developed can be practised or applied to training activities. Based on the results of the practicality test, the training model developed is efficient to implement.

The next test is the effectiveness test, which looks at the pre-test and post-test scores of the training participants. The pre-test and post-test results show a difference in the average score, with the pre-test having an average of 37.31 and the post-test having an average score of 78.08. These results showed an increase in the average test score of 40.77 points. These results indicate that the PBL-based training model can improve the knowledge of managerial competence of Islamic boarding school administrators. These results support the results of previous studies conducted by Mendrofa (2021) and Suharti (2020) that the problem-based learning training model can improve the knowledge of training participants.

Furthermore, an analysis was carried out using the N-Gain formula to determine the criteria for increasing scores and training effectiveness. The training model is effective if the N-Gain score obtained is 0.76 or the N-Gain percentage obtains a score of 76%. The analysis results show that the N-Gain score is 0.65, with a score percentage of 65.03%. These results indicate that the criteria for increasing learning outcomes and the effectiveness of the training model that has been developed are moderate and quite effective.

The N-Gain score results show that the developed training model still has shortcomings. Therefore, evaluating several factors that cause the model to be in the fairly effective criteria is necessary. According to Achmat (2009), two main factors determine the effectiveness of a training activity: the model or method used in training and training materials. Dolmans et al. (2005) explained that the effectiveness of problem-based learning activities is determined by three factors: problems as learning stimuli, tutors as facilitators, and group work as interaction stimuli.

The first factor determining the effectiveness of the training model that has been developed is the problem. According to Schmidt and Moust (1995) and Hmelo-Silver (2004), the presence of a problem will be more effective in encouraging and stimulating someone to learn and build knowledge actively and connect it to what they already know. However, according to Jonassen and Hung (2008), the determinant of the effectiveness of problem-based learning is not the presence or absence of a problem. However, it depends on the difficulty level and complexity of the problem given. The problem's difficulty level is greatly influenced by the level of knowledge, experience, and skills needed to solve problems. Jonassen and Hung (2008) explained that these factors are rarely considered, so it is difficult to determine the right level of difficulty and complexity of the problem.

The facilitator's skills, knowledge, and abilities are the second factor determining the training model's effectiveness. Jones (2006) explained that a facilitator must have the skills to facilitate the learning of training participants in small groups, have a comprehensive understanding of PBL, and have in-depth knowledge and experience of the learning material being discussed. In addition, the facilitator must have the ability to communicate, provide empathy, and build the confidence of training participants.

The third factor is the existence of group work as a stimulus for interaction. Group work allows participants to work together and actively participate during learning. Scott (2017) explained that group learning activities are critical because, through group discussions, participants can motivate each other, share knowledge, build understanding, and allow less experienced participants to practice new skills with guidance from their more experienced colleagues. With the active participation of each participant, the learning outcomes will also be better. Achmat (2009) showed a significant positive relationship between the level of participation and learning achievement in training. This means that the better or higher the level of participant participation, the higher the learning outcome test scores achieved.

The next factor that determines the effectiveness of training activities is training materials. According to Achmat (2009), training activities will be practical if the materials provided are a development of the results of needs analysis. Irianto (2007) explained that needs analysis helps determine topics and the level of depth of the material that must be provided.

From several factors that determine the effectiveness of the training model, further studies are needed to determine what factors cause the effective criteria not to be achieved in

implementing the developed training model. However, based on the results of the study, it can be seen that the training model for improving the managerial competence of Islamic boarding school administrators based on problem-based learning has met the criteria of being valid, very practical, and quite effective so that this training model can be applied in training activities.

Conclusion and Recommendations

The problem-based learning based Islamic boarding school managerial competency improvement training model that has been developed is very much needed because it can improve knowledge about managerial competency in managerial competency indicators, planning function, organizing function, monitoring function, and implementation function. In addition, it has met the valid and practical criteria. However, the effectiveness criteria of the new model have only reached the fairly effective criteria.

The leaders of Islamic boarding schools are expected to facilitate the administrators' taking part in training using the PPKMPP-BPBL model because this model is very helpful in improving knowledge and understanding of managerial competence. Islamic boarding school administrators who have taken part in training to improve managerial competence are expected to apply the knowledge of managerial competence that they have acquired to improve the quality of Islamic boarding school management. It is hoped that other researchers can apply this model to other Islamic boarding schools to develop things not found in this study. For other researchers who want to use this training model, they can pay attention to the factors that can affect the effectiveness of the training.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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