Pedagogic and Managerial Competence for School Principals or Leaders in Early Childhood Education Management

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DOI: 10.31004/obsesi.v7i5.5205

Abstract
The research aims to have a significant influence on the synergy model of pedagogical competence and managerial competence on PAUD management training. This type of research is quantitative using True Experimental Design with Pretest-Posttest Only Control Design. The experimental group was a group with a synergy of pedagogical competence and managerial competence, while the control group was a group that used a conventional training model, each group consisting of 21 managers. Data were analyzed using the N-Gain Test and T-Test. The research results revealed 1) The average N-Gain score for the experimental group was 89.38% (Effective) compared to the average N-Gain score for the control group, namely 75.57% (Quite Effective). 2) The results of the Paired Sample T-Test show a significant influence on increasing learning outcomes for school principal training in early childhood management. The synergy of pedagogical competence and managerial competence is recommended to be implemented in various training programs for school principals and leaders for PAUD management.

Keywords: pedagogic competence; managerial competence; management training

Introduction
Human Resources is the most important component in a company or organization to run the business it runs, including the management of early childhood education. Organizations must have goals that members of the organization want to achieve (Niati et al., 2021). Development is change towards improvement. Change towards improvement requires the mobilization of all human resources and reason to realize what is aspired to (Shah et al., 2020). Human resource development is a process of changing the human resources of an organization, from one situation to another, which is better for preparing for future responsibilities in achieving organizational goals (Werdhiastutie et al., 2020). Individuals contribute to improving the performance of the organization while simultaneously being in the management system helping to understand their role in achieving the organization's strategic goals.

Good early childhood management is determined by the performance of human resources. Therefore, HR competencies need to be managed in human resource management. Recognizing the importance of the role of HR in an organization, HR is not only seen as a
Managerial competence is a source of competitive advantage for companies. Competent managers will produce unique performance that is different from competitors. The research results show that (Wahyudin, 2021) competency explains community-based education management in ensuring the quality of Early Childhood Education so as to find a strategy in implementing community-based education management in ensuring the quality of early childhood education. School management is what makes this very crucial for creating kindergarten or PAUD equivalent as planned (Setiawan & Cahyani, 2022) managerial competence. Julaiha et al., (2023) stated that education management in early childhood is very important to ensure that children receive good and properly structured education. Education management can include effective learning planning, management of facilities and infrastructure, as well as education for PAUD teachers so they can provide high quality education.

Shortcut to develop managerial competency only through training. Most training is associated with organizational commitment. Some suggest organizational commitment motivates employees to participate in training (Tannenbaum et al., 1991) others learn organizational commitment as a result of training (Bulut & Culha, 2010; Newman et al., 2011). Efforts are needed for organizations to make training accessible to employees, such as hiring professionals in the field of training, providing training materials, motivating employees to participate in training and so on.

Training programs are stimulants that workers need to improve their performance and abilities, which in turn increases organizational productivity, (Wirida et al., 2016; Karim et al., 2019; Garavito Hernández et al., 2020; Mobarak Karim et al. 2019; Garavito Hernández et al. 2020). In addition, competency, training, and compensation have a simultaneous and partial positive effect on employee performance (Katidjan et al., 2018). The practical implications of a manager in an organization must first be trained in the application of managerial competence, developing managerial competence and learning problems, before they can become thoroughly aware of their own competence and development needs.

The training required by workers should include pedagogical applications related to PAUD management. Training is needed so that managers are able to use PAUD management. Learning problems in training are closely related to the application of pedagogical competence, therefore managers need to master pedagogical competence. In other words, managers who have mastered managerial competencies need to be synergized with pedagogical competencies in the learning and management training process for early childhood management. The problem is that not many PAUD leaders have yet to obtain or develop the pedagogical competence and managerial competence of school principal training.

Based on the description above, it can be seen that the role of preschool leaders/management in good preschool management will influence the learning outcomes of students and competent PAUD teachers. Good management of early childhood education will transform PAUD institutions into drivers of learning and the foundation of formal schools which are the starting point for the learning process of school children in the future, challenges faced by school principals, as well as efforts to foster the enthusiasm of PAUD educators to be able to apply competition. Pedagogical management in more competent early childhood management. It is hoped that the research results can be used as a reference in preparing the transformation of PAUD institutions, especially for PAUD principals, teachers, parents and educational practitioners.

**Methodology**

This research uses a true experimental design, one of the most widespread experimental designs in educational research in which students are assigned to an experimental group and a control group. The experimental group instructor was accompanied by a professional in the field of education and teaching in designing the training curriculum,
preparing a Learning Implementation Plan and during the training process synergizing pedagogic competencies with managerial competencies, namely synergizing educational, mentoring and training activities. Meanwhile, the control group instructors only used conventional training models. Training treatment is carried out within six weeks.

The population in this study was 56 school principals or PAUD leaders. The sample in this study was 42 school principals or PAUD leaders (75% of the population), who would be distributed into an experimental group of 21 people and a control group of 21 people. Sampling used random sampling technique.

The Learning Achievement Test is used to obtain information about participants' academic abilities to compare the results of the pre-test and post-test learning achievement tests, in each experimental and control group. The pre-test exam is used to determine students' academic abilities before training is carried out. Post-test is used to determine improvements in learning outcomes. The Attitude Test Questionnaire is used to collect information about attitudes during the management training process.

The research data were tabulated, then analyzed descriptively and inferentially using statistics, the statistical package program for the social sciences (SPSS). Descriptive statistics concerns the development of certain indices from raw data while inferential statistics deals with the process of generalization. Post-test and pre-test data were analyzed first with descriptive statistics to obtain the mean N-Gain and standard deviation. ANOVA inferential statistics were used to determine the significance of differences between the experimental and control groups with the t-test.

Results and Discussions

This study analyzes the synergy of pedagogic competence and managerial competence in the training of school principals or leaders in PAUD management. Research data was captured through observation and learning achievement tests from the experimental group and also the control group. After data collection is complete, statistical tests are then carried out. N-Gain descriptive test. At the beginning of learning, a pre-test was carried out to measure students' initial abilities and at the end of learning, a post-test was carried out. Tests for improving learning outcomes can be interpreted using Normalized Gain (N-Gain). First, the Gain Score is determined as table 1.

<table>
<thead>
<tr>
<th>Description</th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Low Score</td>
<td>86.7183</td>
<td>68.9137</td>
</tr>
<tr>
<td>High Score</td>
<td>92.0491</td>
<td>74.2311</td>
</tr>
<tr>
<td>Mean N-Gain</td>
<td>89.3837</td>
<td>71.5724</td>
</tr>
<tr>
<td>Category</td>
<td>High Category</td>
<td>High Category</td>
</tr>
<tr>
<td></td>
<td>Effective</td>
<td>Quite Effective</td>
</tr>
</tbody>
</table>

The mean N-Gain of the experimental group is in the high category, as well as the mean N-Gain of the control group is in the high category. The results of the N-Gain test can be seen in the experimental group there was a higher increase compared to the control group with the N-Gain value obtained 89.3837. The results of the analysis of the post-test data items for each class, namely the experimental class and the control class. Based on the results of the N-Gain score test, it shows that the average N-Gain score for the experimental class is 89.3837 or 89.38% included in the Effective category. The average N-Gain score for the control group is 71.5724 or 71.57% which is included in the Moderately Effective category.
Table 2. Paired Sample T-Test

<table>
<thead>
<tr>
<th>Group</th>
<th>Df</th>
<th>Std. Error</th>
<th>Mean</th>
<th>t_count</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment Vs Control</td>
<td>20</td>
<td>1.041</td>
<td>84.946</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Tabel 3. Activities Instructors and Learners

<table>
<thead>
<tr>
<th>NO</th>
<th>Main Discussion</th>
<th>Focus</th>
<th>Strengthening pedagogic competency</th>
<th>Activites Instructor</th>
<th>Activiteis Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Management</td>
<td>Leadership competence</td>
<td>Attracting attention, arousing, motivation to learn and utilizing information and communication technology for the benefit of organizing educational learning</td>
<td>Open learning to get learners' attention</td>
<td>Take turns introducing yourself</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>Business competence</td>
<td>Provide pedagogical reinforcement to achieve learning goals.</td>
<td>Open a video clip</td>
<td>Watch videos</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical competence</td>
<td>Applying learning theory and educational learning principles</td>
<td>Production techniques</td>
<td>answer questions from the instructor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Knowledge management competence and leadership competence</td>
<td>Facilitating the development of the potential of students to actualize the various potentials they have</td>
<td>Explain the goals and objectives of learning</td>
<td>Trainers relate their early experiences to learning goals and objectives</td>
</tr>
<tr>
<td>2</td>
<td>Marketing</td>
<td>Business Competency</td>
<td>Organizing learning activities that educate and communicate effectively, empathetically, and politely to learners</td>
<td>Communicating facts, demonstrating the stages of the production process and practicing skills in using fish processing equipment.</td>
<td>Understand the aims and objectives of the training</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>Leadership competence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HR organization and management competency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HR organization and management</td>
<td>Knowledge management competency</td>
<td>Communicating facts, explaining consumer behavior, marketing concepts, selling concepts.</td>
<td>Pay attention to the facts related to the processing of fish preservation and then practice the examples demonstrated by the Instructor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>leadership Competency,</td>
<td>Facilitating the development of the potential of students to actualize the various potentials they have</td>
<td>Become a facilitator in discussing the price mix, distribution channel mix and promotion mix</td>
<td>Engage in discussions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Knowledge management competency</td>
<td>Organizing learning activities that educate and communicate effectively, empathetically, and politely to learners.</td>
<td>Communicate facts, explain the structure and systems within the organization, duties, authorities and responsibilities within the organization</td>
<td>Engage in presentations</td>
</tr>
</tbody>
</table>

Based on the data in the table 2, tcount (84,946) > ttable (2,074). This means that H0 is rejected and H1 is accepted. After knowing the results of this research data analysis, the next step is to look at the level of achievement of the objectives of this study. The purpose of this study was to determine whether there was a significant influence between the synergy of...
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Pedagogic and managerial competence in PAUD management training conducted for school principals or leaders. The research results are illustrated in the following diagram.

The pretest results are good according to the experimental assumptions if the experimental group's pretest scores are not significantly different from the control group's pretest results. The results showed that the pretest difference between the experimental group and the control group was 0.17. Thus 0.17<0.5 is not significantly different. The N-Gain test results are in Table 3. The N-Gain test for experimental class and control class above, in the experimental group there was a higher increase compared to the control group with the N-Gain value obtained 89.3837. The results of the analysis of the post-test data items for each class, namely the experimental class and the control class, based on the results of the N-Gain score test showed that the average N-Gain score for the experimental class was 89.3837 or 89.38% included in the Effective category.

The average N-Gain score for the control group is 71.5724 or 71.57% which is included in the Moderately Effective category. The results of the t-test in Table 4. The Paired Sample T-Test above shows t count (84.946) > t table (2.074). This means that H0 is rejected and H1 is accepted. Thus there is a significant influence between the synergy of pedagogic competence and managerial competence in the training of school principals or PAUD leaders in managing management in Maluku Province, Indonesia. The synergy between pedagogic competence and managerial competence in this study can be analyzed through instructor activities and learners' activities that take place during the training process. Observation results, how these two independent variables synergize with each other can be seen in table 3.

The analysis of the synergy of pedagogic competence with managerial competence in table V above shows that each learners has the opportunity to form managerial competence. The instructor's pedagogic ability in providing training can facilitate the formation of technical competence, business competence, knowledge management competence and leadership competence.

Discussions
Based on the results of the analysis carried out, it was found that synergizing pedagogical competencies with managerial competencies, especially technical competencies, business competencies, knowledge management competencies and leadership competencies in the training of school principals and PAUD management leaders in the province of Maluku-Indonesia can provide very satisfying learning results. If it is linked to the results of previous research or literature studies which have several similarities with the results of previous research.

Damayanti, (2019) revealed that improving the PAUD curriculum can be carried out by educators or teachers, such as through the process of curriculum preparation, curriculum planning, curriculum implementation, and curriculum development which can also improve the quality of institutions. PAUD which can be seen from the pedagogical and managerial competence of the head of the school as an PAUD leader. (Musa et al., 2022) revealed that the management skills carried out by the school principal in leading and managing good PAUD will be able to move the learning system, in this case the PAUD teacher as in developing institutions towards driving schools. Challenges in developing PAUD institutions towards Mobilizing Schools.

Pedagogic competence has a big influence, because pedagogic competence is an aspect of competence that is directly used in learning activities ranging from lesson planning to learning evaluation that must be possessed by PAUD leaders in order to maintain the quality of teachers in providing the earliest formal learning in learning in PAUD (Asmarani, 2021) The importance of PAUD management is an important part that must be considered by seeing that competition between PAUD institutions requires qualified human resources with high competitiveness. The school principal was appointed because he has the ability as a leader in an educational institution which will later achieve the maximum goals of the institution
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(Lestariningrum et al., 2019) is one of the efforts to manage PAUD to become a quality institution and create a generation that is ready to face the next steps in life. Improving the quality of management is needed in educational staff, so that the process of implementing activities in early childhood education institutions runs optimally as well as effectively and efficiently (Jf & Latif, 2020).

(Yuniari, 2018) explains that if the implementation of the education and training program increases the competence of PAUD managers in accordance with the management function, managers or organizers carry out the implementation properly, all activities have been conditioned during implementation, this is proven that in implementation the facilitator provides learning in accordance with their duties and provides motivation (Nurlela & Amelia, 2021) said that apart from that, PAUD principals must be able to manage classes, management/managerial is a series of activities to plan, organize, and develop all efforts in managing and empowering human resources, facilities and infrastructure to achieve goals in education/organization. personality, social, professional. (Mariani, 2023) PAUD management carries out every administrative/management function in general, namely planning, organizing, directing, supervising, and development. Therefore PAUD management needs to be formed to meet the expectations, needs, desires and determine the direction of school policies in order to achieve educational goals.

(Ismail, 2023) said that the managerial competence of the head of the Integrated Kindergarten is in increasing the potential of teachers through making learning media from inorganic waste. Through these activities, it is hoped that it will be useful for kindergarten teachers so that they can help teachers be more creative in creating their own learning media. PAUD management to bring out the best from this academic service. in school equipment, especially schools, good security is a requirement that schools must pay attention to for further progress (Anggraini et al., 2023) PAUD management is an effort to regulate the PAUD education process so that it can achieve the goal of helping children grow and develop optimally, namely in terms of cognitive, affective and psychomotor(Santika et al., 2023). Managerial training for school heads or PAUD leaders can be given training related to the learning process of early childhood. Apart from that, it can also help PAUD managers and educators to be information literate which will have an impact on the creativity of developing learning facilities for early childhood in learning in PAUD (Shaheen et al., 2023).

The component that greatly influences the success of achieving PAUD goals is human resources. HR is a fundamental component and becomes very dominant in all learning management activities both on a large and small scale (Kurniasari et al., 2022). (Nalle et al., 2023) revealed that providing preparation training using managerial management was able to have a significant impact on PAUD educators and PAUD managers with the aim that they could better understand how to plan/design learning. (Anggraini et al., 2023) says that human resource management is the most important part in the movement of an institution, including PAUD institutions, and human resources are also one of the benchmarks for the quality of the institution. There are still many educational institutions that in fact in terms of human resource management are not optimal and are still lacking. Human resource management is an important part of core management that specializes in human expertise, as a workforce that carries out activity processes in accordance with the goals of the organization or institution.

Conclusions

The success of pedagogic competency training with managerial leadership competencies in the training of school principals and leaders in managing PAUD in Maluku-Indonesia province can provide very satisfying learning outcomes. Strengthening pedagogic competencies at each learning stage is significant in building learners’ cognitive, affective and psychomotor structures. Pedagogical competence is a moderator variable to facilitate the formation of managerial competence in managing and leading organizations by school principals and PAUD leaders. The relationship between pedagogic competence is significant.
with knowledge management and leadership competence. Managerial competence can be developed through a training process so it is recommended to synergize pedagogic competence with managerial competence in various materials regarding leadership issues in managing management systems in an organization. The context of this research is PAUD.

Acknowledgement
The author would like to thank all research samples who supported the success of the research and to Patimura University which supported all research so that good research results and manuscripts were created.

References


