JURNAL ECONOMINA e-ISSN: 2963-1181
Volume 5, Number 9, September 2026
Homepage: ejournal.45mataram.ac.id/index.php/economina

The Mediating Role of Knowledge Acquisition in the Effect of Training Design Quality on Employee Training Effectiveness at PT Pan Brothers Tbk

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Article History

Received: 01-09-2026
Revised: 22-09-2026
Published: 30-09-2026

Keywords: Training Materials, Training Curriculum, Training Instructors, Knowledge Acquisition, Training Effectiveness

ABSTRACT

This study examines the impact of training design quality—specifically training materials, curriculum, and instructors—on employee training effectiveness, with knowledge acquisition serving as a mediating factor. The research was conducted among employees of PT Pan Brothers Tbk who had participated in training programs, utilizing a quantitative method via a survey of 170 respondents. The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results demonstrate that training materials and knowledge acquisition contribute positively and significantly to training effectiveness. Conversely, curriculum and instructors did not show a significant influence on training effectiveness. Furthermore, knowledge acquisition was not found to act as a mediator in the relationship between training materials, curriculum, and instructors and training effectiveness. The study's findings indicate that training effectiveness is driven more by the relevance of the material and the learning outcomes achieved by participants than by structural factors within the training design. This research offers practical benefits for the company in developing training programs that place greater emphasis on learning outcomes and operational needs.

INTRODUCTION

Employee training is an effective way for organizations to improve employee competency so they can compete in an increasingly complex workplace. No only need give program training, but Also must ensure that the training truly helps improve employees' knowledge, skills, and work attitudes. Training effectiveness is an important indicator of the success of a company's investment. in development source Power man, Because training Which No succeed It can waste resources without delivering tangible results on organizational performance. In practice, the effectiveness of training is influenced by the quality of the training design, including the training materials, curriculum, and instructors.

Training materials do not only include the content delivered during the training process, but Also required compile in a way systematic, relevant in accordance need Jobs, in line with

technological developments and industry demands, and able to bridge the competency gaps that participants have. According to Noe (2020), quality training materials must capable support achievement objective training through delivery information that accurate, easy understood, And can implemented in context work. In line with In addition, (Khawaja Jehanzeb, 2013) explains that the effectiveness of a training program is influenced by the suitability of the content to the needs of participants and the organization because relevant material will increase learning motivation and the ability of participants to absorb new knowledge. In addition, Sitzmann and Weinhardt (2018) emphasized that training materials that are up-to-date, contextual, and oriented to practice in the world of work have a greater influence on learning outcomes than materials that are theoretical and less suited to job needs.

Curriculum training functioning as guidelines in organization training so that the learning process can take place in a structured, directed manner, and according to the needs of the organization and training participants. According to Sutrisno (2019), a good curriculum must be designed based on an analysis of training needs, work competency standards, and the demands of industrial development in order to produce training graduates who have the appropriate skills. with need organization. In line with That, Amadioha And Chord (2020) explains that an effectively designed training curriculum will help participants understand the material in a gradual and comprehensive manner, thereby increasing the success of the learning process. Besides That, Martin, Kolomitro, And Lam (2014) state that structure curriculum Which clear allows integration between objective learning, method training, and the desired results to be achieved so as to improve the quality of the participants' learning experience.

Then, a training instructor is an individual who has the knowledge, skills, and competence to design, deliver, guide, and evaluate the learning process in a training program with the aim of improving competence. participant. Role instructor here very influential as facilitator, motivator, and mentors in helping participants understand and apply the knowledge gained during the training. According to Noe (2020), training effectiveness is greatly influenced by the instructor's ability to convey material clearly, create active learning interactions, and adapt learning methods to the characteristics of the participants. with That, Martin, Kolomitro, And Lam (2014) state that competence Instructors are a key factor in creating an effective learning experience because they play a role in explaining concepts, providing feedback, and facilitating the transfer of knowledge to participants.

Furthermore, knowledge acquisition is the process by which individuals acquire, understand, absorb, and internalize new information, concepts, skills, and experiences gained through learning or training activities so that they can be used to improve competency and work performance. In the context of training, knowledge acquisition reflects the level of achievement of training participants. understand material Which given And become indicator main results learning (learning outcomes). According to Nonaka and Takeuchi (1995),

knowledge acquisition is a crucial stage in the process of creating and developing individual knowledge, enabling the transformation of information into valuable competencies for the organization. Similarly, Noe (2020) explains that the success of a training program is largely determined by the participants' ability to acquire and master new knowledge relevant to job demands.

Training effectiveness is the degree to which a training program achieves its stated objectives, whether by improving participants' knowledge, skills, attitudes, or abilities, which can ultimately be applied in their work to improve individual and organizational performance. Training effectiveness is measured by participants' ability to understand, remember, and apply the material they have learned in their work environment. According to Kirkpatrick and Kirkpatrick (2006), training effectiveness can be evaluated through changes in learning (learning), behavior (behavior), And results (results) Which obtained after participants have completed the training. Similarly, Noe (2020) stated that training is considered effective if it results in increased competency relevant to job requirements and supports the achievement of organizational goals. Manna and Biswas (2018) explain effectiveness training influenced various factor, including quality design training, participant characteristics, training environment, and participant ability to absorb knowledge Which given. Besides That, (Alias et al., (2019) find that factors Training design such as the quality of materials, curriculum, and instructors has an important role in determining the success of the training because it can improve the learning process and transfer of knowledge to participants.

There is existence gap results study Which need investigated more carry on, especially in the context of manufacturing organizations in Indonesia. Based on what has been explained, this study aims For study influence material training, curriculum training, And teacher training on the effectiveness of employee training with knowledge mastery as a connecting variable. This study aims to provide theoretical input in the development of human resource management literature, particularly regarding how training effectiveness works, as well as the contribution practical for company in increase program training Which more focus on learning outcomes and operational needs.

METHOD STUDY

This study employed a quantitative method, utilizing primary data obtained directly from PT Pan Brothers Tbk employees through the distribution of structured questionnaires. Primary data is information taken directly from the source for research purposes, thus providing an accurate picture of the actual state of the object being studied. Respondents in this study were PT Pan Brothers Tbk employees who had participated in the training program, as they have direct experience with the training materials, curriculum, instructors, knowledge gained, and effectiveness. training. In gather data use questionnaire Which own a five-point Likert scale, ranging from strongly disagree to strongly agree, to assess views respondents to

every indicator from study This. Besides data main, researchers also uses secondary data as a complement obtained from books, research journals, research reports, and other literature relevant to the research variables to strengthen the theoretical and empirical basis of this study.

In this study, a non-probability sampling method was used, namely purposive sampling, which means that the sample was selected based on certain criteria determined by the researcher in accordance with the research objectives. This method was chosen because No all member from population has opportunity the same one For become respondents, but only individuals who met the research criteria, namely employees of PT Pan Brothers Tbk who had participated in the training program. Purposive sampling was chosen because it helped researchers obtain more accurate information from respondents who had direct experience with the training material, training curriculum, training instructors, knowledge understanding, and training effectiveness. The sample size was determined using the Malhotra methodology, which stipulates that the minimum sample size in multivariate research should be five times the number of indicators used. With 20 indicators, 170 respondents were required as a sample. The use of this sample size is considered sufficient for Partial Least Squares (PLS) analysis because it can provide stable and representative parameter results when testing the relationship between several variables in this study.

In conducting data analysis in this study, the Structural Equation Modeling–Partial method was used. Least Squares (SEM-PLS) implemented with device soft SmartPLS. Every The questionnaire was created based on indicators representing each variable, namely Training Material, Training Curriculum, Training Instructor, Knowledge Acquisition, and Training Effectiveness. Measurements used a Likert scale with five levels, from strongly disagree (1) to strongly agree (2). agree (5), For know attitude, thinking, And view for respondents about The phenomenon being studied (Sekaran & Bougie, 2021). The researcher chose SEM-PLS because of its ability to simultaneously test complex relationships between latent variables. It includes the evaluation of direct and indirect impacts through mediating variables and is well-suited for predictive research models with limited sample sizes, due to its suitability for complex study models and minimal sample sizes (Ghozali & Kusumadewi, 2023). The analysis stage begins with an evaluation of the measurement model. (outer model) For evaluate validity And reliability tool measuring based on mark outer loading, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha. After That, process to be continued with test on model structural (inner model) use evaluate the extent to which the model is able to explain the relationship between variables using the R-squared (R^2) value, size effect (f^2), And relevance predictive (Q^2). Eligibility model study evaluated through indicators Standardized Root Mean Square Residual (SRMR) And Normalized Fit Index (NFI). In testing hypothesis, method bootstrapping implemented with consider mark t-statistics and p-values, Where a hypothesis is considered valid if t-statistics exceed 1.96 and

p-values less than 0.05 at the 5% significance level. With this approach, the study can provide comprehensive insights into the influence of training materials, training curriculum, and training instructors on training effectiveness.

RESULTS AND DISCUSSION

Respondent Data

Table 1 Specific Respondents

Information	Characteristics	Frequency	Percentage
Type sex	Man	97	57%
	Woman	73	43%
Age	18 s/d 24 Year	15	10%
	25 to 30 Year	100	59%
	=> 30 Year	55	31%
Education	High School/Vocational School	166	97%
	S1	4	3%

Source: Data Obtained, 2026

From Table 1, the characteristics of the participants in this study show that the majority of participants were male, a total of 97 people (57%), while female participants numbered 73 people (43%). This shows that employee training at PT Pan Brothers Tbk is more dominated by men. by man, Which influential to effectiveness training in gain knowledge to improve performance in the company.

Based on age, most of the participants were in the 25–30 years age group, with 100 participant (59%) aged in on 30 years and 55 participant (31%). Matter This shows that participants mostly come from the young adult age group who usually want to take part in training to gain knowledge to support performance at PT Pan Brothers Tbk.

Furthermore, in terms of educational background, the majority of participants were high school/vocational school graduates, with a total of 166 participants (97%). This indicates that the majority of employees at PT Pan Brothers Tbk are high school/vocational school graduates who desire to increase their knowledge by participating in training.

Testing Validity And Realibility

Validity test results And reliability aim ensure that the research tools used to measure the construct are accurate and consistent. Convergent validity test seen from the factor loading value and the average The variance that extracted (AVE), while the test reliability is measured by the reliability value composite. From testing validity and reliability for each variable in this study is shown in Table 2.

Table 2 Results Test Validity And Reliability

Loading Variable	Composite AVE	Factor	Reliability
Mother Training	0.8044	0.806	0.975
	0.7429		
	0.7668		
	0.7605		
	0.7707		
Curriculum Training	0.7501	0.639	0.825
	0.7807		
	0.7852		
	0.7546		
	0.8106		
Instructor Training	0.7655	0.673	0.848
	0.7978		
	0.7507		
	0.7859		
Knowledge Acquisition	0.6848	0.875	0.938
	0.7644		

	0.7614		
	0.7126		
Effectiveness Training	0.8256	0.796	0.895
	0.8317		
	0.7078		
	0.8202		
	0.7335		

Based on analysis data Which there is on Table 2, all indicator from every The variables show an outer loading value of more than 0.50. This means that all indicators have met the requirements for convergent validity and can well represent the construct being measured (Hair et al., 2022; Ghozali, 2023). From mark indicator own mark outer loading in on 0.70, indicating fairly high validity. For the training effectiveness variable, each indicator had an average outer loading value above 0.80, indicating very strong validity in measuring this construct.

Furthermore, If seen from mark composite reliability, all variables get the above value 0.70, which is 0.975 for the material training, 0.825 for training curriculum, 0.848 for training instructors, 0.938 For acquisition knowledge, And 0.895 For effectiveness training. These values indicate that each construct has good reliability results, so that research tools this can be considered consistent and reliable (Hair et al., 2022; Ghozali, 2023).

Meanwhile, the results of the Average Variance Extracted (AVE) evaluation show that all variables have mark more from 0.50, that is 0.806 For material training, 0.639 for the curriculum training, 0.673 For instructor training, 0.875 For acquisition knowledge, and 0.796 for training effectiveness. The AVE value indicates the construct by explaining more from 50% variation from the indicators Which fulfil condition convergent validity (Hairet al., 2022).

From Which Already explained all variables in studies This has fulfil condition validity and reliability, so that the measurement model (outer model) is considered sufficient to be used for further analysis.

Test R-Square

In structural model assessment, the R-squared (R^2) value is used to assess how well the model can explain differences in dependent variables. The R-squared value is used to assess how effectively the independent variables in the model can explain the dependent variable (Hair et al., 2022).

Table 3 Mark R- Square

Variables Dependent	R Square
Effectiveness Training	0.9146

From Table 3, the R-Square (R^2) value which reaches 0.9146 indicates that this model has level ability currently in to describe variation Which there is on effectiveness of training. Therefore, components such as Training materials, training curriculum, training instructors, and knowledge acquisition can collectively explain some of the variation in training effectiveness, while the rest is variations that Not yet explained by the model that used in studies This. According to Hairet al, (2022), mark on R-Square 0.75 relatively strong, 0.50 moderate, And 0.25 weak. So from That, with mark R-Square 0.9146 Which obtained in study This, can categorized as strong, show that model structural

Testing Hypothesis

Table 4 Test Hypothesis

No.	Hypothesis	Sample Mean	Standard Deviation	T-Test	Upper CI	Lower CI	Status
1	Training → Work Effectiveness	0.2334	0.0988	2.3626	0.0734	0.4046	Significant
2	Curriculum → Work Effectiveness	-0.0446	0.0990	-0.4508	-0.2014	0.1159	Not Significant
3	Training Materials → Work Effectiveness	0.3372	0.1109	3.0397	0.1464	0.5273	Significant
4	Knowledge Development → Work Effectiveness	0.4650	0.1065	4.3686	0.2869	0.6376	Significant

From Table 4, it was found that the training material variable (X1) was found to have a positive and significant influence on training effectiveness, so that the hypothesis (H1) was stated as supported. This finding may indicate that training material is an important factor in increasing the effectiveness of training for PT Pan Brothers Tbk employees.

Furthermore, the training curriculum variable (X2) has a positive but not significant influence on the training effectiveness variable, so the hypothesis (H2) is declared not supported. Findings This can show, although direction connection nature positive, curriculum training is not strong enough to significantly impact training effectiveness.

Then, variables instructor training (X 3) found have influence positive and significant on effectiveness training, so that hypothesis (H 3) stated supported. Findings this can indicates that communication Which brought by instructor training become important role in improving the effectiveness of employee training at PT Pan Brothers Tbk.

Temporary That For variables acquisition knowledge (X4) found have influence positive and significant on training effectiveness, so that hypothesis (H4) stated to be

supported. The findings This can indicates that acquisition knowledge employee training become a role important to improve skills, performance, and effectiveness of employee training at PT Pan Brothers Tbk.

Testing Mediation

Table 5 Test Hypothesis

Independent	Mediation	Dependent	P1	P2	P3	Conclusion
Training Materials	Knowledge Acquisition	Training Effectiveness	0.624	0.138	0.101	Complementary (partial mediation)
Training Curriculum	Knowledge Acquisition	Training Effectiveness	0.001	0.308	0.101	Direct only (no mediation)
Training Instructor	Knowledge Acquisition	Training Effectiveness	0.690	0.308	- 0.099	Indirect only (partial mediation)

From the data above, it can be seen that the acquisition of knowledge is a complementary partial mediation in connection material training with effectiveness training Because Good p1, p2, and p3 are significantly positive.

Meanwhile, in the relationship between training instructors and training effectiveness, the acquisition of knowledge No play a role as mediation (direct only) Because p1 No significant However p2 and p3 are significant.

Then in the relationship between training instructors and knowledge acquisition, training effectiveness does not play a role as a dependent (indirect only) because the p3 value is not significant but the p1 and p2 values are significant.

Discussion

From the results of this study, training materials have a significant influence on knowledge acquisition directly and have a significant influence indirectly. to effectiveness training. According to Adult Learning Theory, learners Adults tend to understand and internalize knowledge more easily if the material provided is relevant to job needs and can be applied directly in practice. Work. Material Which arranged in a way systematic, actual, And in accordance with objective Training will improve participants' ability to understand and absorb the information provided. Research by Yao, Chang, and Fan (2014) shows that the quality of training materials contributes to increased knowledge acquisition by participants through a more effective knowledge transfer process. Relevant and high-quality training materials do not directly increase training effectiveness, but rather first increase participants' existing knowledge. This acquired knowledge then becomes the basis for future work. for participants For understand and implementing training results in work. Thus, the better the quality of the training materials, the higher the knowledge gain of the training participants.

Furthermore, this study determined that the training curriculum did not have a significant influence. to acquisition knowledge in a way direct And own influence indirectly

significant impact on training effectiveness. This indicates that there are influencing factors, one of which is the curriculum not being aligned with job needs. According to Training Needs Analysis (TNA) theory, training will be effective if the program content aligns with job needs. When the curriculum is too theoretical, less relevant to daily tasks, and does not follow industry developments, its impact on improving competence and performance is low.

From analysis study This put forward existence instructor training own has a significant influence on knowledge acquisition directly and does not have a significant indirect influence on training effectiveness. This indicates that success training No solely determined by ability instructor in delivering the material. Participants tend to pay more attention to the relevance of the training material to their needs. work and benefits that can be applied in work activities everyday life. Furthermore, the development of modern learning methods that utilize technology allows participants to acquire knowledge from various sources besides the instructor. Thus, training effectiveness is more influenced by the quality of program design and the appropriateness of the material than by the characteristics of the instructor itself.

The results of this study found that the acquisition of knowledge has a significant influence. to effectiveness training in a way direct. Matter the indicates that the higher the level of knowledge obtained by participants during the training, the more effective the training in achieving the learning objectives that have been set. The knowledge obtained by participants allows they understand draft, procedure, and skills needed in the job so that the benefits of training can be felt directly. The results of this study support Human Capital Theory , which explains that developing employee knowledge will improve the quality of human resources and organizational effectiveness. Furthermore, these findings are also in line with with Model Kirkpatrick Training Evaluation which places the learning aspect as the main indicator of the success of the training program.

CONCLUSION AND SUGGESTIONS

This study aims to evaluate the impact of the quality of training design which includes training content, training curriculum, and training instructors on training effectiveness, by knowledge Which obtained as variables intermediary on employee PT Pan Brothers Tbk. Results study disclose that content training give impact positive and significantly impact training effectiveness. These findings suggest that training content that is appropriate, organized, and relevant to job demands can enhance the success of a training program.

Furthermore, the training curriculum did not significantly impact training effectiveness. These results indicate that the structure and design of the existing curriculum are not yet the primary factors determining training success. Furthermore, instructors training Also No show influence significant to effectiveness training, which shows that participants prioritize the benefits of training based on the relevance of the content and learning outcomes obtained compared to the characteristics of the instructor who delivers the material.

This study also found that knowledge acquisition had a positive and significant effect on training effectiveness. This finding reinforces the view that increased knowledge is a key indicator of training success because the knowledge gained by participants can help implement training outcomes in the workplace. However, knowledge acquisition was not proven to mediate the effects of training content, training curriculum, or training instructors on training effectiveness. Therefore, training effectiveness at PT Pan Brothers Tbk is determined more by the quality of training content and the level of knowledge acquired by participants than by other training design factors.

For PT Pan Brothers Tbk, research shows that training content is the most influential factor in training success. Therefore, the company must ensure that content training always updated in accordance with progress technology, operational needs, And demands in industry manufacturing. Contents training Also should designed more practical with a focus on case studies, work simulations, and direct practice so that the knowledge gained by participants can be applied well in the workplace.

Additionally, companies should improve their evaluation methods for participant learning outcomes to ensure that the knowledge gained during training is truly applicable to daily work activities. Even if training curriculum and instructors do not appear to have a significant impact, companies should still conduct regular evaluations of curriculum design and instructor skills to improve the overall quality of training.

For future researchers, it is recommended to expand the research object to various companies or industrial sectors so that the results can be more generalizable. Future research could also add other variables such as learning motivation, training transfer, organizational support, training satisfaction, or employee competency as variables. Which bridge or Which strengthen For get understanding Which more complete information about the factors that influence training effectiveness.

Furthermore, future researchers could use a longitudinal approach to observe the effects of training over time, thus explaining how knowledge gained during training translates into changes in work behavior and sustained improvements in employee performance. This is crucial for enriching the development of human capital theory and training effectiveness in the context of human resource management.

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