



PRIORITY STRATEGIES FOR ENHANCING THE EFFECTIVENESS OF EDUCATION AND TRAINING PROGRAMS IN TVRI PRODUCTION AND BROADCASTING

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Abstract

The rapid development of digital technology and the transformation of the broadcasting industry require TVRI to strengthen the quality and competitiveness of its human resources through effective education and training programs. This study aimed to formulate priority strategies for improving the effectiveness of education and training programs in production and broadcasting at TVRI using the Scientific Identification Theory to Conduct Operation Research in Education Management (SITOREM) approach. The study employed a quantitative descriptive method involving 164 employees selected through quota sampling from a population of 278 employees across 30 TVRI stations in Indonesia. Data were collected using questionnaires measuring training effectiveness, competency development effectiveness, transformational leadership, communication technology literacy, and information technology literacy. Data were analyzed using path analysis and SITOREM analysis. The results revealed that communication technology literacy had the strongest direct effect on training effectiveness ($\beta = 0.472$), followed by transformational leadership ($\beta = 0.182$), information technology literacy ($\beta = 0.150$), and competency development effectiveness ($\beta = 0.137$). SITOREM analysis identified fourteen indicators that require immediate improvement, namely communication, data management, evaluation, intellectual stimulation, inspirational motivation, individual consideration, technology integration in learning, creative technology application, knowledge development, performance improvement, work-experience implementation, leadership enhancement, training alumni empowerment, and training method development. These findings indicate that strengthening technological literacy, transformational leadership, competency development, and post-training utilization are strategic priorities for improving training effectiveness and supporting TVRI's digital transformation.

Keywords: Training Effectiveness, SITOREM, Transformational Leadership, Communication Technology Literacy, Information Technology Literacy.

INTRODUCTION

The broadcasting industry is currently undergoing a rapid transformation driven by advancements in information and communication technologies, media digitalization, and changes in the way people access information and entertainment. The emergence of various digital platforms, video streaming services, and internet-based media has significantly altered media consumption patterns, shifting them from traditional linear broadcasting systems to more flexible, interactive, and on-demand services. These changes require broadcasting organizations to continuously adapt and innovate to maintain their relevance, sustainability, and competitiveness within an increasingly dynamic and highly competitive media landscape (Philip, 2021; Verhoef et al., 2021; Lumban, 2024; Marcel et al., 2024).

As a Public Broadcasting Institution (PBI), TVRI has a strategic responsibility to provide information services, educational content, healthy entertainment, and the preservation of national culture for all Indonesian citizens. At the same time, TVRI faces various challenges, including lower competitiveness compared to private broadcasting organizations, changing audience preferences, and the growing demand for digital transformation, which requires competent and adaptable human resources. Therefore, the development of human resource quality has become a key factor in

supporting successful organizational transformation and enhancing the quality of broadcasting services (Saraswaty & Pusparini, 2023; Wulandari et al., 2024; Marcel et al., 2024).

Education and training programs serve as strategic instruments for enhancing employee competencies, enabling them to adapt to technological advancements and the evolving demands of the modern broadcasting industry. Through the effective implementation of education and training programs, employees are expected to improve their knowledge, skills, and professional capabilities that are relevant to workplace requirements. Therefore, the effectiveness of education and training programs is a critical factor in supporting the achievement of organizational goals, particularly in addressing the challenges of digital transformation within TVRI (Aguinis & Kraiger, 2000; OECD, 2021).

Internal evaluations conducted within TVRI indicate that the implementation of education and training programs continues to face several challenges. Findings from focus group discussions and interviews with various stakeholders revealed issues related to training planning, learning methods, instructor quality, training outcome evaluation, utilization of training alumni, and the alignment of training content with organizational needs and technological developments. In addition, limitations in competency development, leadership capacity, and technological literacy were identified, which may reduce the overall effectiveness of training programs. These findings are consistent with previous studies demonstrating that the success of training programs is strongly influenced by the quality of training management, organizational support, leadership effectiveness, and participants' technological readiness (Hughes et al., 2019; Nawaz et al., 2022; Zalukhu et al., 2025).

Numerous previous studies have examined the effectiveness of education and training programs across various organizations and government institutions. However, most of these studies have primarily focused on measuring training effectiveness, identifying factors influencing training success, or evaluating the implementation of training programs. In general, they have not provided specific priority recommendations regarding which indicators should be addressed first to enhance the effectiveness of training implementation. As a result, the findings often remain at a descriptive level and have not been fully translated into practical and operational improvement strategies (Setyaningsih et al., 2019; Sunaryo et al., 2021). To bridge this gap, one approach that can be employed is the Scientific Identification Theory to Conduct Operations Research in Education Management (SITOREM). SITOREM analysis enables the findings of quantitative research to be translated into practical recommendations by identifying indicators that require immediate improvement and those that should be maintained or further developed based on expert judgment and empirical conditions in the field. By considering factors such as cost, benefit, urgency, and importance, SITOREM provides a more objective basis for formulating organizational performance improvement strategies (Hardhienata, 2017; Dasmo et al., 2026).

Based on the foregoing discussion, this study aims to formulate priority strategies for enhancing the effectiveness of education and training programs in TVRI's production and broadcasting sector through the application of SITOREM analysis. Specifically, the study seeks to identify indicators that require immediate improvement as well as those that should be maintained or further developed based on the contributions of competency development effectiveness, transformational leadership, communication technology literacy, and information technology literacy to the effectiveness of training implementation. The findings are expected to provide a foundation for the development of policies and human resource development strategies that are more effective in supporting the success of TVRI's digital transformation initiatives.

LITERATURE REVIEW

Education and Training Effectiveness

Education and training effectiveness refers to the extent to which training programs achieve their intended objectives by improving employees' knowledge, skills, competencies, and job performance. Effective training enables participants to apply newly acquired competencies in the workplace, thereby contributing to organizational productivity and service quality. According to Zalukhu et al. (2025), the effectiveness of training is determined by the alignment between competency needs, instructional methods, organizational support, and continuous evaluation of training outcomes.

Priority Strategies for Education and Training

Priority strategies are systematic approaches used to identify and implement the most critical actions for enhancing education and training programs within an organization. These strategies emphasize competency gap analysis, alignment of training objectives with organizational goals, efficient resource allocation, and continuous improvement. Yakin (2025) argues that developing digital competencies has become a strategic priority for organizations facing job automation, requiring continuous learning, technological adaptability, and workforce reskilling to remain competitive.

Television Production and Broadcasting Competency

Television production and broadcasting competency encompasses the technical, creative, communication, and digital capabilities required to produce high-quality broadcasting services. As broadcasting organizations undergo digital transformation, continuous education and training become essential for strengthening employees' competencies and organizational performance. Wulandari et al. (2024) state that TVRI's digital transformation has significantly improved public broadcasting services through technological innovation, human resource development, and the adoption of more adaptive operational systems.

METHOD

This study adopted a quantitative descriptive approach to investigate the factors affecting the effectiveness of education and training programs in TVRI's production and broadcasting sector and to formulate priority improvement strategies using the SITOREM (Scientific Identification Theory to Conduct Operations Research in Education Management) analysis framework (Hardhienata, 2017). The study sample consisted of 164 employees selected through a quota sampling technique from a population of 278 employees distributed across 30 TVRI stations throughout Indonesia. Research data were collected using questionnaires designed to measure the effectiveness of education and training programs, competency development, transformational leadership, communication technology literacy, and information technology literacy. Content validity was established through expert judgment, while empirical validity was assessed using item-total correlation analysis. All variables demonstrated high reliability, with Cronbach's alpha coefficients exceeding 0.70.

Data analysis was conducted in two stages. The first stage employed path analysis to identify the magnitude of the direct effects of competency development effectiveness, transformational leadership, communication technology literacy, and information technology literacy on the effectiveness of education and training programs. The second stage utilized SITOREM analysis to determine which indicators should be prioritized for immediate improvement and which should be maintained or further developed. The SITOREM analysis was carried out through four stages: (1) contribution analysis, which involved ranking the contributions of the independent variables to the dependent variable based on their coefficients of determination; (2) indicator analysis, which involved calculating the mean score of each indicator across all variables; (3) indicator weighting, which involved evaluating each indicator according to the criteria of cost, benefit, urgency, and importance, with assessments conducted by experts in educational management; and (4) indicator classification, which involved establishing strategic priorities for the improvement and development of the identified indicators.

RESULTS AND DISCUSSION

Results

The results of the path analysis revealed that communication technology literacy had the strongest direct effect on the effectiveness of production and broadcasting education and training programs ($\beta = 0.472$), compared with competency development effectiveness ($\beta = 0.137$), transformational leadership ($\beta = 0.182$), and information technology literacy ($\beta = 0.150$). All of these effects were statistically significant ($p < 0.05$). The analysis also yielded a coefficient of determination of $R^2 = 0.469$, indicating that the four independent variables collectively explained a

substantial proportion of the variance in the effectiveness of production and broadcasting training programs. Based on these findings, SITOREM analysis was subsequently conducted to translate the effects observed at the variable level into strategic priorities at the indicator level. While path analysis focuses on the strength of relationships among variables, SITOREM is used to identify specific indicators that require immediate improvement and those that should be maintained or further developed based on their relative importance and empirical performance. For the variable of training effectiveness in production and broadcasting programs (Table 1), the indicators related to the utilization of training alumni and the development of training methods emerged as the highest priorities for improvement. In contrast, the comprehensiveness of training planning, the regularity of training evaluation, the appropriateness of training implementation, and the consistency of post-training follow-up were classified as indicators that should be maintained or further enhanced.

Table 1. Results of the SITOREM Analysis for the Effectiveness of Education and Training Programs

No	Initial Indicator	Indicator After Expert Judgment (Rank & Weight)	Indicator Score
1	Comprehensiveness of Training Planning	1 st Comprehensiveness of Training Planning (17%)	4.04
2	Appropriateness of Training Implementation	2 nd Regularity of Training Program Evaluation (17%)	4.03
3	Regularity of Training Program Evaluation	3 rd Utilization of Training Alumni (17%)	3.70
4	Consistency of Post-Training Follow-Up	4 th Appropriateness of Training Implementation (15%)	4.05
5	Development of Training Methods	5 th Consistency of Post-Training Follow-Up (15%)	4.08
6	Utilization of Training Alumni	6 th Development of Training Methods (15%)	3.77

For the variable of competency development effectiveness (Table 2), knowledge development, performance improvement, enhanced application of work experience, and leadership development were identified as priority indicators requiring immediate improvement. Meanwhile, other indicators, including skill enhancement, increased adaptability, the development of positive attitudes, the strengthening of organizational values, and the development of employee interests, demonstrated relatively better performance and were therefore classified as indicators that should be maintained or further developed.

Table 2. Results of the SITOREM Analysis for the Effectiveness of Competency Development

Effectiveness of Competency Development ($\beta = 0.137$; Rank IV)		
Initial Indicator	Indicator After Expert Judgment (Rank & Weight)	Indicator Score
Knowledge Development	1 st Knowledge Development (12%)	3.92
Skill Enhancement	2 nd Skill Enhancement (11%)	4.06
Development of Positive Attitudes	3 rd Performance Improvement (11%)	3.97
Performance Improvement	4 th Increased Adaptability (11%)	4.09

Effectiveness of Competency Development ($\beta = 0.137$; Rank IV)		
Initial Indicator	Indicator After Expert Judgment (Rank & Weight)	Indicator Score
Increased Adaptability	5 th Enhanced Application of Work Experience (11%)	3.88
Leadership Development	6 th Development of Positive Attitudes (10%)	4.08
Enhanced Application of Work Experience	7 th Leadership Development (10%)	3.89
Strengthening of Values	8 th Strengthening of Values (10%)	4.16
Interest Development	9 th Interest Development (10%)	4.18

For the transformational leadership variable (Table 3), intellectual stimulation, inspirational motivation, and individualized consideration were identified as the primary indicators requiring improvement. In contrast, the indicator of idealized influence demonstrated relatively stronger performance and was therefore classified as an indicator that should be maintained.

Table 3. Results of the SITOREM Analysis for Transformational Leadership

Transformational Leadership ($\beta = 0.182$; Rank II)		
Initial Indicator	Indicator After Expert Judgment (Rank & Weight)	Indicator Score
Idealized Influence	1 st Idealized Influence (28%)	4.08
Inspirational Motivation	2 nd Intellectual Stimulation (26%)	3.38
Intellectual Stimulation	3 rd Inspirational Motivation (24%)	3.93
Individualized Consideration	4 th Individualized Consideration (21%)	3.46

For the communication technology literacy variable (Table 4), communication, data management, and evaluation were identified as priority indicators requiring immediate improvement. In contrast, the indicators of needs identification, content creation, access, and integration demonstrated relatively strong performance and were therefore classified as indicators that should be maintained or further developed.

Table 4. Results of the SITOREM Analysis for Communication Technology Literacy

Communication Technology Literacy ($\beta = 0.472$; Rank I)		
Initial Indicator	Indicator After Expert Judgment (Rank & Weight)	Indicator Score
Needs Identification	1 st Needs Identification (15%)	4.48
Access	2 nd Content Creation (14%)	4.13
Data Management	3 rd communication (14%)	3.57
Integration	4 th access (13%)	4.43
Evaluation	5 th Data Management (13%)	3.63
Content Creation	6 th integration (13%)	4.35
Communication	7 th evaluation (13%)	3.58

For the information technology literacy variable (Table 5), technology integration in learning and the creative application of technology were identified as priority indicators requiring immediate improvement. In contrast, the indicators of fundamental technological proficiency and the use of

educational applications demonstrated relatively strong performance. They were therefore classified as indicators that should be maintained or further developed.

Table 5. Results of the SITOREM Analysis for Information Technology Literacy

Information Technology Literacy ($\beta = 0.150$; Rank III)			
Initial Indicator		Indicator After Expert Judgment (Rank & Weight)	Indicator Score
Fundamental Technological Proficiency		1 st Technology Integration in Learning (27%)	3.84
Use of Educational Applications		2 nd Fundamental Technological Proficiency (25%)	4.35
Creative Application of Technology		3 rd Use of Educational Applications (23%)	4.17
Technology Integration in Learning		4 th Creative Application of Technology (23%)	3.53

Overall, the analysis identified a hierarchy of indicators that should be prioritized for immediate improvement and those that should be maintained or further developed (Table 6). The results indicate that fourteen indicators were classified as priorities for immediate improvement, while sixteen indicators were identified as indicators that should be maintained or further enhanced. This integrated analysis demonstrates that SITOREM extends the findings of path analysis by translating statistical relationships into operational decisions at the indicator level.

Table 6. Priority Indicators for Immediate Improvement and Indicators to be Maintained or Further Developed Based on the SITOREM Analysis

Immediate Improvement Priorities	Indicators to be Maintained/Developed
1 st Communication	1 st Needs Identification
2 nd Data Management	2 nd Content Creation
3 rd Evaluation	3 rd Access
4 th Intellectual Stimulation	4 th Integration
5 th Inspirational Motivation	5 th Idealized Influence
6 th Individualized Consideration	6 th Fundamental Technological Proficiency
7 th Technology Integration in Learning	7 th Use of Educational Applications
8 th Creative Application of Technology	8 th Skill Enhancement
9 th Knowledge Development	9 th Increased Adaptability
10 th Performance Improvement	10 th Development of Positive Attitudes
11 th Enhanced Application of Work Experience	11 th Strengthening of Values
12 th Leadership Development	12 th Interest Development
13 th Utilization of Training Alumni	13 th Comprehensiveness of Training Planning
14 th Development of Training Methods	14 th Regularity of Training Program Evaluation
	15 th Appropriateness of Training Implementation
	16 th Consistency of Post-Training Follow-Up

Discussion

The findings of this study indicate that the effectiveness of education and training programs in TVRI's production and broadcasting sector is influenced by the effectiveness of competency development, transformational leadership, communication technology literacy, and information technology literacy. Among these four variables, communication technology literacy made the greatest contribution to the effectiveness of education and training programs. This finding suggests that the success of human resource development initiatives in the era of digital transformation is determined not only by the quality of training content but also by employees' ability to utilize communication technologies to support learning processes, collaboration, information management, and knowledge sharing. These results are consistent with previous studies demonstrating that digital literacy and technology-based communication competencies are essential capabilities that enhance organizational learning effectiveness and contribute to the successful implementation of digital transformation (Falloon, 2020; van Laar et al., 2020).

The SITOREM analysis revealed that communication, data management, evaluation, intellectual stimulation, inspirational motivation, individualized consideration, technology integration in learning, the creative application of technology, knowledge development, performance improvement, the application of work experience, leadership development, the utilization of training alumni, and the development of training methods were identified as priority indicators requiring immediate improvement. These findings suggest that the primary challenges faced by TVRI extend beyond the technical aspects of training implementation and involve the organization's ability to promote learning transfer, innovation, leadership development, and the effective utilization of technology. Organizations that successfully navigate digital transformation are those that are capable of integrating competency development, adaptive leadership, and technology utilization into a continuous learning system (OECD, 2021; González-varona et al., 2021).

The findings regarding the importance of transformational leadership reinforce the view that successful organizational change is strongly influenced by leaders' ability to articulate a clear vision, inspire employees, and foster creativity and innovation. Transformational leaders play a crucial role in creating a work environment that supports learning and competency development, thereby enhancing organizational readiness to respond to dynamic changes. At the same time, the relatively low scores on the indicators of technology integration and the creative application of technology suggest that basic technological proficiency alone is insufficient to support digital transformation. Effective digital transformation requires not only technical competence but also the ability to integrate technology into work processes and learning activities in meaningful and innovative ways (Peng et al., 2021; Arnaud et al., 2024).

Overall, the findings demonstrate that SITOREM analysis can translate statistical results into more operational improvement strategies by identifying priority indicators that exert the greatest leverage on the effectiveness of education and training programs. Accordingly, efforts to enhance the

effectiveness of education and training programs in TVRI's production and broadcasting sector should focus on strengthening communication technology literacy, developing transformational leadership, improving the effectiveness of competency development, enhancing information technology literacy, and optimizing the utilization of training alumni as well as innovation in training methods. Concentrating improvement initiatives on these priority indicators is expected to accelerate TVRI's digital transformation while simultaneously enhancing the quality of human resources required to sustain organizational performance in an increasingly dynamic and evolving broadcasting industry.

CONCLUSION

This study demonstrates that the effectiveness of education and training programs in TVRI's production and broadcasting sector is influenced by competency development, transformational leadership, communication technology literacy, and information technology literacy, with communication technology literacy making the greatest contribution. Through the application of SITOREM analysis, fourteen indicators were identified as priorities for improvement, namely communication, data management, evaluation, intellectual stimulation, inspirational motivation, individualized consideration, technology integration in learning, the creative application of technology, knowledge development, performance improvement, the application of work experience, leadership development, the utilization of training alumni, and the development of training methods. These findings highlight that efforts to enhance the effectiveness of education and training programs at TVRI should focus on strengthening technology literacy, developing transformational leadership, improving the effectiveness of competency development, and optimizing learning systems and post-training follow-up mechanisms. Therefore, the results of this study provide a valuable foundation for formulating more targeted human resource development strategies to support TVRI's digital transformation and enhance its organizational competitiveness.

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