

## Addie Model in Analyst Training to Improve the Professionalism of Mawar Clinic Lab Officers in Bandung City

Feronica Melinda Muskitta<sup>1</sup>, Rian Andriani<sup>2</sup>, Bambang Sukajir

Magister Manajemen, Universitas Adhirajasa Reswara Sanjaya

---

### Article Info

#### Article history:

Accepted: 19 January 2026

Publish: 1 February 2026

---

#### Keywords:

Training Model;

ADDIE;

ATLM;

Professionalism;

Clinical Laboratory.

---

### Abstract

*This study aims to analyze the training model for Medical Laboratory Technology Analysts (ATLM) in improving staff professionalism at the Mawar Clinical Laboratory in Bandung City. The research employed a qualitative case study design with data collected through in-depth interviews, observations, and documentation reviews. Data analysis was conducted using the ADDIE model—Analysis, Design, Development, Implementation, and Evaluation—supported by thematic coding assisted by NVivo software to enhance analytical rigor and validity. The findings indicate that the analysis phase identified the need to strengthen technical competencies, SOP comprehension, time management, and soft skills among ATLM staff. In the design phase, a competency-based training curriculum was developed according to laboratory standards. During the development phase, training modules, media, and evaluation instruments were produced and validated. Implementation was carried out through blended learning, hands-on practice, and direct supervision. The evaluation demonstrated improvements in ATLM professionalism, particularly in accuracy, discipline, SOP compliance, service quality, and work ethics. Overall, the ADDIE based training model proved relevant and effective in enhancing laboratory staff professionalism and is recommended for sustainable competency development within Mawar Clinical Laboratory.*

*This is an open access article under the [Lisensi Creative Commons Atribusi-BerbagiSerupa 4.0 Internasional](https://creativecommons.org/licenses/by-sa/4.0/)*



---

### Corresponding Author

Feronica Melinda Muskitta

Magister Manajemen, Universitas Adhirajasa Reswara Sanjaya

email: [melindaferonica36@gmail.com](mailto:melindaferonica36@gmail.com)

---

## 1. INTRODUCTION

Healthcare is a form of public service that plays a strategic role in ensuring public health. The World Health Organization (WHO) emphasizes that effective and high-quality healthcare must be supported by adequate healthcare resources, including personnel, facilities, and other support systems (Siswati, 2015). The Indonesian government also emphasizes the state's responsibility to ensure the provision of quality healthcare through various regulations, including Law Number 17 of 2023 concerning Health, which emphasizes the importance of continuously developing the competencies of medical and healthcare personnel as part of improving the quality of healthcare services.

Medical laboratories play a crucial role in the healthcare system as they serve as the primary support for establishing diagnoses, monitoring therapy, and evaluating patient health conditions. The quality of laboratory test results is largely determined by the competence and professionalism of Medical Laboratory Technologists (ATLM), the

healthcare professionals responsible for analyzing human body fluids and tissues. Based on Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/MENKES/313/2020, ATLM are required to possess technical competence, high accuracy, and the ability to implement work standards and professional ethics in accordance with statutory regulations (Dewi Apriyantini & Amal Chalik Sjaaf, 2023).

ATLM professionalism is not only related to mastery of technical skills, but also includes adherence to Standard Operating Procedures (SOPs), work discipline, time management, and a professional attitude in providing services. Health laboratories, as medical support service units, are required to ensure that every examination process is carried out according to minimum service standards to ensure the accuracy of results and patient safety (Indonesian Health Profile, 2016). Therefore, improving ATLM professionalism through human resource development is a necessity that cannot be ignored.

Various regulations mandate regular training for health laboratory personnel. Minister of Health Regulation No. 43 of 2019 concerning Community Health Centers and Minister of Health Regulation No. 80 of 2020 concerning Technical Guidelines for ATLM Functional Positions emphasize that training is part of the competency and career development of ATLM personnel. Systematically designed training is expected to improve the technical skills, understanding of Standard Operating Procedures (SOPs), and professional attitudes of laboratory personnel in supporting the quality of health services.

Several studies have shown that competency-based training and ongoing training have a positive impact on improving ATLM professionalism. Susilowati (2021) stated that competency-based training is effective in improving job skills relevant to field needs. Harahap (2022) and Setiawan and Ramadhani (2020) also found that structured training can improve technical skills, examination accuracy, and understanding of professional ethics among laboratory personnel. These findings demonstrate that training is a crucial instrument in improving the quality of laboratory services.

Furthermore, research by Suryani and Wijaya (2022) and Puspitasari and Amalia (2021) indicates that blended learning-based training models and training tailored to organizational needs can strengthen the technical aspects and professional attitudes of laboratory personnel. Anggraini (2023) emphasizes the importance of in-house training tailored to the local context in shaping the work ethic and responsibility of laboratory personnel. These research findings indicate that training models need to be tailored to the characteristics and needs of healthcare institutions.

Based on empirical conditions at the Mawar Clinical Laboratory in Bandung City, which provides laboratory examination services to the general public, there is a need to improve the professionalism of ATLM officers through structured and ongoing training. This clinic plays a crucial role in supporting healthcare services, and the quality of ATLM performance is a determining factor in service quality. Therefore, this study aims to analyze a laboratory analyst training model to improve the professionalism of Mawar Clinical Laboratory officers in Bandung City as an effort to support the improvement of healthcare service quality.

## 2. RESEARCH METHODS

This research uses a qualitative approach with a case study design, chosen to gain an in-depth understanding of the process, context, and dynamics of laboratory analyst training in improving the professionalism of officers at the Mawar Clinical Laboratory in Bandung City. The qualitative approach is deemed appropriate because it allows researchers to explore phenomena holistically and naturally, and to explore the meaning behind training

practices that take place in a real work environment. The case study is used to examine in depth a specific unit of analysis, namely the Mawar Clinical Laboratory, as the empirical context of the research, so that the results are expected to be able to describe the reality of training implementation in a comprehensive and contextual manner.

The research location was determined to be the Mawar Clinical Laboratory in Bandung City, considering that the clinic is a healthcare facility that provides basic and advanced laboratory tests and involves Medical Laboratory Technology Experts (ATLM) in daily service activities. The research timeframe was adjusted to the needs of field data collection, from the preparation stage and data collection to the analysis and validation of findings. The selection of the research location and timeframe was conducted purposely to ensure data sufficiency and the relevance of the research context to the stated objectives.

The research subjects were determined using purposive sampling, which involves selecting participants based on specific criteria relevant to the research focus. Participants included ATLM officers, laboratory leaders or those in charge, and relevant parties directly involved in the planning, implementation, and evaluation of training at the Mawar Clinical Laboratory. The purposive sampling technique was chosen because it allows researchers to obtain information-rich cases from individuals with experience, knowledge, and direct involvement in the training process, resulting in more in-depth and meaningful data.

Data collection techniques were conducted through in-depth interviews, direct observation, and documentation review. In-depth interviews were used to explore participants' perceptions, experiences, and views regarding training needs, program design, implementation processes, and the impact of training on ATLM professionalism. Observations were conducted to directly observe laboratory staff work practices, compliance with SOPs, and interactions within the service process. Meanwhile, the documentation review included analysis of internal documents such as laboratory SOPs, training modules, activity reports, and other supporting documents to strengthen the findings from interviews and observations.

Data analysis was conducted in stages and systematically, referring to the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation (Branch, 2009). In the analysis stage, researchers identified training needs, competency gaps, and problems faced by ATLM officers. The design stage focused on designing the curriculum, materials, and strategies for competency-based training. The development stage involved the development of modules, training media, and evaluation instruments. Furthermore, the implementation stage examined the implementation of the training, while the evaluation stage assessed the effectiveness of the training in improving the professionalism of laboratory officers.

To enhance the accuracy of the analysis, qualitative data were analyzed using thematic coding techniques with the aid of NVivo software. Using NVivo enabled researchers to systematically group data, identify key themes, and map relationships between categories in a more structured manner. The analysis process included open coding, axial coding, and selective coding, allowing for transparent and traceable presentation of research findings. This approach also served to increase the consistency and accuracy of qualitative data interpretation.

The validity of the data in this study was maintained through the application of source and method triangulation techniques, namely, comparing the results of interviews, observations, and documentation to ensure consistency of findings. Furthermore, the researcher also double-checked the data and interpreted the results by taking into account the field context to ensure that the resulting findings truly reflect the empirical conditions

studied. By applying these methodological procedures, this study is expected to have an adequate level of credibility, dependability, and confirmability as a scientific study in the field of health service management and human resource development in clinical laboratories.

### **3. RESEARCH RESULTS AND DISCUSSION**

The research results were obtained through in-depth interviews, direct observations, and documentation reviews, analyzed thematically using NVivo software. The discussion was conducted by linking empirical findings in the field with theory and previous research findings, thus providing a comprehensive understanding of the effectiveness of the implemented training model.

#### **3.1. Research result**

The research results were obtained through in-depth interviews, direct observation, and documentation review, which were analyzed thematically using NVivo software. Data analysis was conducted using the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation (Branch, 2009). The research findings indicate that the training model implemented at the Mawar Clinical Laboratory in Bandung City can systematically describe the process of developing the competency of Medical Laboratory Technology Experts (ATLM) in improving work professionalism.

In the Analysis phase, the research results indicated a need to improve the technical competency of ATLM officers, particularly in understanding SOPs, inspection accuracy, work time management, and strengthening soft skills such as communication and professional ethics. Interviews and observations revealed that although officers already possess basic competencies, there is still a gap between expected work standards and field practices. This finding demonstrates the importance of needs analysis as a basis for developing relevant and contextual training programs.

In the design phase, research results showed that the training was competency-based, adhering to laboratory service standards. The training curriculum covered laboratory technical topics, SOP implementation, biosafety, quality management, and professional ethics. The learning strategy was designed using a combination of theory, case discussions, and hands-on practice to enable participants to understand and apply the material to meet the needs of clinical laboratory work.

Research results from the Development phase indicate that the training modules, learning media, and evaluation instruments were developed in a structured manner and validated before use. The modules were designed to facilitate understanding of work procedures and laboratory service quality standards. This systematic material development aimed to ensure the training content aligned with the needs of ATLM staff and the service context of the Mawar Clinic.

During the implementation phase, training was conducted using a blended learning approach, combining theoretical learning, hands-on practice, and instructor supervision. Observations showed that participants were more active and engaged in the learning process, and were able to apply the acquired knowledge and skills in their daily work practices. This approach provided an applicable and contextual learning experience for ATLM officers.

The evaluation phase demonstrated that the training had a positive impact on improving the professionalism of ATLM officers, particularly in terms of work

accuracy, discipline, compliance with SOPs, service quality, and work ethics. The evaluation was conducted through observations of changes in work behavior and feedback from participants and management. The evaluation results indicated that the ADDIE-based training model was effective in improving the performance of clinical laboratory officers.

### **3.2. Discussion**

The results of the study indicate that the implementation of the ADDIE-based training model at the Mawar Clinical Laboratory in Bandung City aligns with human resource development principles that emphasize the alignment between job needs and training programs. The needs analysis stage is an important foundation in ensuring training relevance, as emphasized by Branch (2009) and Dessler (2017) that effective training must begin with a clear mapping of competency gaps.

The competency-based training design found in this study supports the views of Dick and Carey (2015) and Harden (2020) that health worker training design should be oriented toward achieving measurable work skills. The integration of technical and non-technical materials in the training curriculum has proven effective in addressing the professional needs of ATLM comprehensively, encompassing not only technical skills but also professional attitudes and ethics.

The development of validated training modules and media demonstrates that the quality of teaching materials plays a crucial role in improving participant understanding and readiness. This finding aligns with Clark and Mayer (2016) and Bates (2019), who stated that systematically and contextually designed training materials can enhance the effectiveness of the learning process.

Implementing training through a blended learning approach significantly contributes to participant engagement and knowledge transfer to the workplace. These results support the findings of Suryani and Wijaya (2022) and Nurhayati et al. (2021), which confirmed that practice-based learning and a combination of online and offline learning are effective in improving the accuracy and work readiness of laboratory personnel.

The training evaluation results showed changes in work behavior and improved laboratory service quality, which is in line with the Kirkpatrick and Kirkpatrick (2006) evaluation model. Improved SOP compliance, work ethics, and discipline among ATLM officers indicate that the training impacted not only cognitive aspects but also affective aspects and work behavior.

Overall, the discussion of the research findings confirms that the ADDIE-based laboratory analyst training model is relevant and effective in improving the professionalism of ATLM staff at the Mawar Clinical Laboratory in Bandung City. This model can be used as a practical reference for the development of sustainable clinical laboratory human resource training that is oriented towards the quality of health services.

## **4. CONCLUSION**

This study concluded that the implementation of the ADDIE-based laboratory analyst training model was proven effective in improving the professionalism of Medical Laboratory Technologists (ATLM) at the Mawar Clinical Laboratory in Bandung City. The training model, which began with a comprehensive needs analysis, was able to identify gaps in technical and non-technical competencies among staff, resulting in more relevant,

contextual, and appropriate training designed to meet the demands of clinical laboratory work (Branch, 2009).

The research results show that the design and development of competency-based training, which integrates laboratory technical materials, understanding of SOPs, biosafety, quality management, and professional ethics, significantly contributes to improving the quality of ATLM performance. The implementation of training through a blended learning approach and hands-on practice allows for the effective transfer of knowledge and skills into daily work practices, thereby strengthening the professionalism of laboratory personnel.

The training evaluation phase indicated improvements in examination accuracy, work discipline, compliance with standard operating procedures (SOPs), service quality, and ATLM professional ethics. These findings confirm that training not only improves knowledge and skills but also encourages positive changes in work behavior, as emphasized in the Kirkpatrick and Kirkpatrick (2006) training evaluation model and the WHO (2021) recommendations regarding the development of health laboratory personnel.

Overall, the ADDIE-based training model implemented in this study has theoretical and practical relevance in the context of healthcare management, particularly in the development of human resources in clinical laboratories. This model can serve as a reference for healthcare institutions in designing structured, sustainable internal training programs oriented toward improving the quality of laboratory services and patient safety.

## 5. ACKNOWLEDGEMENT

The author expresses his praise and gratitude to God Almighty for His grace and blessings, enabling this research to be completed. He also extends his deepest gratitude to the Rector of Adhirajasa University, Reswara Sanjaya, the Director of the Master of Management Postgraduate Program, and the Head of the Master of Management Study Program for their academic support throughout the research and writing of this article.

The author also expresses his appreciation and gratitude to the supervisors who have devoted their time, energy, and thought to providing constructive direction, input, and guidance, enabling this research to be completed systematically and scientifically. He also extends his gratitude to all lecturers and staff of the Master of Management Postgraduate Program at Adhirajasa Reswara Sanjaya University for their support and assistance throughout the study period.

We also express our gratitude to the management and all staff of the Mawar Clinical Laboratory in Bandung City for their permission, support, and cooperation during the research data collection process. We extend our sincere appreciation to our family, friends, and fellow students for their constant prayers, motivation, and moral support throughout the completion of this research. We hope that the results of this research will benefit the development of science and the practice of health laboratory service management.

## 6. BIBLIOGRAPHY

Andriani, R. (2020). *Manajemen Sumber Daya Manusia Modern*. Bandung: ARS University.

Anggraini, N. (2023). *Pelatihan internal dan etika kerja petugas laboratorium*. *Jurnal Teknologi Laboratorium*, 12(2), 55–64.

Anwar Prabu Mangkunegara, A. A. (2000). *Manajemen sumber daya manusia perusahaan*. Bandung: Remaja Rosdakarya.

Artikel penelitian kualitatif.

**14 | Addie Model in Analyst Training to Improve the Professionalism of Mawar Clinic Lab Officers in Bandung City (Feronica Melinda Muskitta)**

- BNSP & Kemenkes RI. (2021). *Standar Kompetensi Kerja Nasional Indonesia (SKKNI) Ahli Teknologi Laboratorium Medik*. Jakarta: BNSP.
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.
- Brown, A., & Green, T. (2020). *The essentials of instructional design*. Routledge.
- Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction*. Wiley.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE handbook of qualitative research*.
- Dewi Apriyantini & Sjaaf, A. C. (2023). *Ahli Teknologi Laboratorium Medik dalam pelayanan laboratorium klinik*. *Jurnal Kesehatan Indonesia*, 14(1), 33–42.
- Dewi, S., & Prasetyo, A. (2023). *Penerapan Pendekatan ADDIE pada Pelatihan Kesehatan*. Artikel penelitian kualitatif.
- Fauziah, R., & Rahmawati, T. (2020). *Pelatihan kompetensi dan etika kerja ATLM*. *Jurnal Analis Kesehatan*, 7(3), 211–220.
- Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. (2005). *Principles of instructional design*. Waveland Press.
- Garrison, D. R., & Vaughan, N. (2008). *Blended learning in higher education*. Jossey-Bass.
- Hamalik, O. (2001). *Manajemen pelatihan keterampilan*. Bandung: Mandar Maju.
- Handayani, T. (2020). *Penggunaan NVivo dalam Analisis Pelatihan Tenaga Kesehatan*.
- Harahap, F. (2022). *Pengaruh pelatihan modul interaktif terhadap kompetensi ATLM*. *Jurnal Teknologi Medik*, 9(1), 44–56.
- Hidayat, R., & Sumarni, T. (2021). *Analisis Kebutuhan Pelatihan Tenaga Laboratorium Klinik*. Artikel penelitian kualitatif.
- Hutapea, L. (2020). *Analisis Pelatihan dan Kinerja ATLM*. Artikel penelitian kualitatif. Kemenkes RI. (2020). *Petunjuk Teknis Jabatan Fungsional ATLM*. Jakarta: Jurnal Metodologi Penelitian Kesehatan, 7(1), 44–53. Kementerian Kesehatan Republik Indonesia.
- Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating training programs: The four levels*. Berrett-Koehler Publishers.
- Klinik*. *Jurnal Teknologi Laboratorium Kesehatan*, 8(2), 55–63.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.
- Komara, E., Syaodih, E., & Andriani, R. (2022). *Metode penelitian kualitatif dan kuantitatif*. PT Refika Aditama. ISBN 978-623-6232-63-7.
- Mathis, R. L., & Jackson, J. H. (2002). *Human Resource Management*. Thomson Learning.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook*. SAGE Publications.
- Moleong, L. J. (2019). *Metodologi penelitian kualitatif*. Bandung: Remaja Rosdakarya.
- Nurhayati. (2020). *Penerapan Model ADDIE dalam Pelatihan Tenaga Laboratorium*
- Nurhayati, D., dkk. (2021). *Efektivitas blended learning dalam pelatihan ATLM*. *Jurnal Pendidikan Kesehatan*, 3(2), 122–130.

- Parwati, S., dkk. (2022). *Peran ATLM dalam pelayanan laboratorium klinik*. Jurnal Laboratorium Medik, 11(1), 15–25.
- Permenkes RI Nomor 24 Tahun 2022 tentang Rekam Medis Elektronik. Phillips, J. J., & Phillips, P. P. (2016). *The value of learning*. Wiley.
- Permenkes RI Nomor 4 Tahun 2009 tentang Sistem Kesehatan.
- Permenkes RI Nomor 42 Tahun 2015 tentang Penyelenggaraan Laboratorium.
- Permenkes RI Nomor 43 Tahun 2019 tentang Puskesmas.
- Prasetyo, A. (2022). *Evaluasi Program Pelatihan Laboratorium Menggunakan Model ADDIE*. Jurnal Evaluasi Pendidikan dan Pelatihan, 10(1), 33–45.
- Pratiwi, L., & Nurhadi, D. (2023). *Implementasi model ADDIE pada pelatihan tenaga laboratorium*. Jurnal Pendidikan Profesi, 5(1), 77–86.
- Profil Kesehatan RI. (2016). Kementerian Kesehatan Republik Indonesia.
- Puspitasari, D., & Amalia, R. (2021). *Pengembangan model pelatihan blended learning untuk ATLM*. Jurnal Pelatihan Kesehatan, 4(2), 89–102.
- Putri, S., & Hidayat, R. (2021). *Efektivitas pelatihan berbasis SOP*. Jurnal Manajemen Laboratorium, 6(1), 45–52.
- Rahayu, D. (2023). *Managerial Competency Development in Clinical Laboratory*.
- Rahmawati, D., & Syafrudin, M. (2021). *Pelatihan Berbasis Kompetensi pada Petugas Laboratorium*. Jurnal Pelatihan dan Pengembangan SDM, 4(2), 89–97.
- Rozalena & Dewi, R. (2017). *Manajemen Sumber Daya Manusia*. Jakarta: Rajawali Pers.
- SAGE Publications.
- Sari, D. A., & Fadillah, R. (2022). *Experiential learning pada pelatihan ATLM*. Jurnal Pendidikan Kesehatan, 8(2), 134–142.
- Setyorini, T. (2018). *Pelayanan laboratorium dan kepuasan konsumen*. Jurnal Kesehatan Masyarakat, 12(3), 188–196.
- Siswati, M. (2015). *Mutu pelayanan kesehatan dan SDM*. Jurnal Kesehatan Nasional, 9(2), 101–107.
- Sugiyono. (2017). *Metode penelitian kualitatif*. Bandung: Alfabeta.
- Sukajie, B. (2019). *Manajemen Organisasi dan Standarisasi Prosedur*. Jakarta: Pustaka Karya Madani.
- Sukajie, B. (2020). *Penerapan Tata Kelola dan Disiplin Kerja dalam Meningkatkan Kinerja SDM*. Jurnal Manajemen Publik, 3(1), 22–34.
- Sukajie, B. (2021). *Sistem Pengawasan Internal dan Penjaminan Mutu Organisasi*. Jakarta: Literasi Nusantara.
- Suryani, R., & Wijaya, A. (2022). *Dampak pelatihan kompetensi terhadap akurasi pemeriksaan laboratorium*. Jurnal Medis Diagnostik, 4(1), 22–30.
- Susilowati, R. (2021). *Efektivitas pelatihan berbasis kompetensi*. Jurnal SDM Kesehatan, 10(2), 55–63.
- Undang-Undang Nomor 17 Tahun 2023 tentang Kesehatan.
- WHO. (2020). *Laboratory Quality Management System Handbook*. World Health Organization.
- Wulandari, F. (2021). *Evaluasi pelatihan tenaga laboratorium*. Jurnal Evaluasi Pelatihan, 2(2), 99–110.