

Model Management Training Based on Addie To Improve School Librarians' Competence in Achieving Excellent Library Accreditation

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Abstract: Purpose of the study: This study aims to develop and evaluate an ADDIE-based training management model to improve school librarians' competencies in supporting the achievement of excellent library accreditation standards in senior high schools in Binjai City. Methodology: This study employed a Research and Development (R&D) methodology based on the ADDIE model. Data collection techniques comprised interviews, observations, expert validation instruments, and competency assessments. The data were analyzed statistically using the Shapiro-Wilk test for normality, paired sample t-test, and N-Gain score analysis with the assistance of SPSS software. Main Findings: The developed model was validated as feasible by experts and demonstrated significant effectiveness. Pretest and posttest scores increased substantially in both limited and large group trials. Statistical testing confirmed significant differences, and N-Gain results indicated high effectiveness categories. Applications of this study: The training model can be applied in educational institutions, school systems, and librarian professional development programs. It is particularly useful for schools preparing library accreditation and for education authorities seeking structured competency improvement strategies. Novelty/Originality of this study: This study provides an empirically tested ADDIE-based training management model specifically designed for school librarians and linked to accreditation standards. The research integrates instructional design theory, professional competency development, and accreditation requirements within a single framework.

Keywords: Training, Management, librarian competence, school library, accreditation.

A. Introduction

School libraries serve a crucial function in enhancing the quality of education, fostering literacy growth, and improving students' academic achievement. Modern school libraries are expected to function as learning resource centers that facilitate access to information, promote reading culture, and support knowledge creation processes (IFLA, 2015). However, many school libraries still struggle to meet national standards due to limitations in infrastructure, management, and human resource competence.

One of the major challenges in improving library quality is the competence of school librarians. Librarian competence includes managerial skills, technical knowledge, information literacy abilities, and the capacity to integrate technology into library services (Perpustakaan Nasional Republik Indonesia, 2021). When librarians lack adequate competence, library services become less effective, and accreditation standards are difficult to achieve.

In Binjai City, preliminary observations conducted across several senior high schools revealed that many librarians had not received structured training programs. Existing training activities were mostly incidental and lacked systematic evaluation mechanisms. Consequently, librarians experienced difficulties in managing administrative documentation, implementing technology-based services, and preparing accreditation requirements.

Training is widely recognized as a strategic approach to improving employee competence and organizational performance. However, training programs often fail to produce sustainable improvement when they are not designed based on systematic needs analysis and structured evaluation (Noe, 2019). Effective training requires comprehensive planning, implementation, and evaluation processes that align with participants' needs and organizational objectives.

The ADDIE model comprising Analysis, Design, Development, Implementation, and Evaluation provides a structured and systematic approach for designing and delivering effective training programs. The model emphasizes needs analysis, structured design, product development, implementation, and evaluation to ensure effectiveness (Branch, 2009). Previous studies have shown that ADDIE-based training can significantly improve professional competence in educational contexts (Sulistyaningrum, 2022) (Armizawati, 2022).

Despite its effectiveness, research focusing on ADDIE-based training specifically for school librarians linked to accreditation achievement remains limited. Accordingly, this study is intended to design and assess an ADDIE-based training management model to improve librarian competence in achieving excellent library accreditation standards in senior high schools in Binjai City.

B. Methods

This study adopted a Research and Development (R&D) approach, drawing on Walter R. Borg and Meredith D. Gall (2003), and was structured through the ADDIE framework, which encompasses five sequential stages: Analysis, Design, Development, Implementation, and Evaluation. Participants of the Study Participants were school librarians from senior high schools in Binjai City.

Implementation was conducted in two stages:

1. Limited group trial (5 librarians) — January 15, 2026
2. Large group trial (17 librarians from 9 schools) — February 4, 2026

Data Collection Techniques

Observation

Interviews

Validation questionnaires

Pretest and posttest competency tests

Data Analysis

Statistical analysis used SPSS software including:

Shapiro–Wilk normality test

Paired sample t-test

N-Gain score analysis

Normality test results indicated that data were normally distributed with significance values greater than 0.05

Results and Discussion

Implementation of ADDIE Model

Analysis Phase

The analysis phase was conducted through observation and interviews across nine sample schools. The purpose was to identify competency gaps and training needs of librarians. The findings revealed that librarians required structured and programmed training to improve competencies, particularly in library management, information services, technology utilization, and accreditation preparation. Most librarians had never participated in comprehensive professional development programs, indicating an urgent need for systematic training interventions. These findings support training management theory which states that accurate needs analysis is essential for effective training design (Noe, 2019).

Design Phase

Based on the needs analysis, the training products were designed, consisting of:

1. ADDIE-based training management model book
2. Librarian competency training module

The design included learning objectives, training materials, learning strategies, and evaluation instruments aligned with accreditation standards.

The training approach adopted adult learning principles emphasizing participant experience and active involvement (Knowles, 1980).

Development Phase

The development phase involved producing and validating the training products. Validation covered:

- Content feasibility
- Language clarity
- Visual appearance
- Practical usability
- Relevance to participant needs

Expert validation results indicated that the products were feasible with revisions. This process ensured the quality and readiness of training materials before implementation.

Implementation Phase

The implementation phase involved conducting training using qualified resource persons. Training was conducted in two stages:

Limited Group Trial

- Date: January 15, 2026
- Participants: 5 librarians

Large Group Trial

- Date: February 4, 2026
- Participants: 17 librarians from 9 schools

Participants received training modules and model books. Learning methods included lectures, discussions, simulations, and practical exercises.

Active learning approaches were applied to enhance competency development effectiveness (Priadi, 2020).

Evaluation Phase

Evaluation was conducted by comparing pretest and posttest results.

Normality test results confirmed data distribution was normal

Paired sample t-test results showed significant differences between pretest and posttest scores

Statistical Results

1. Normality Test

Table 1. Normality Test (Limited Group)

Variabels	Shapiro Wilk Sig
Pretest	0.814
Posttest	0.119

Table 2. Normality Test (Large Group)

Variabels	Shapiro Wilk Sig
Pretest	0.290
Posttest	0.090

All Shapiro–Wilk significance values exceeded 0.05, indicating normal data distribution.

2. Paired Sample T-Test

Limited Group:

Pretest Mean = 53.00

Posttest Mean = 90.00

Large Group:

Pretest Mean = 58.68

Posttest Mean = 92.35

Results confirmed significant improvement after training.

3. N-Gain Analysis

Table: N-Gain Index Criteria

N-Gain Score (g)	Category
$g \geq 0.70$	High
$0.30 \leq g < 0.70$	Moderate
$g < 0.30$	Low

(Hake, 1999)

Limited Trial

Average N-Gain = 0.79 (High Category)

Large Trial

Average N-Gain = 0.81 (High Category)

These results indicate high effectiveness of the training model.

C. Results and Discussion

Results

This study aimed to develop and evaluate an ADDIE-based training management model to improve the competencies of school librarians in senior high schools in Binjai City. The research applied the Research and Development (R&D) approach using the ADDIE framework consisting of Analysis, Design, Development, Implementation, and Evaluation stages. The results indicate that the developed model was valid, feasible, and effective in enhancing librarian competencies.

1. Analysis Phase

The analysis phase was conducted through observations and interviews in nine senior high schools in Binjai City. This stage aimed to identify the competency gaps and training needs of school librarians. The findings revealed that many librarians still experienced limitations in library management, information services, technology utilization, and accreditation preparation. In addition, most participants had rarely attended structured professional development programs.

The results indicate the importance of systematic training management to improve librarian professionalism. According to training management theory, effective training programs should begin with a comprehensive needs analysis to ensure that learning activities address actual participant needs (Noe, 2019). Therefore, the analysis stage became the foundation for designing relevant training materials and learning strategies.

The needs analysis also showed that librarians required practical learning experiences directly related to school library management and accreditation processes. Consequently, the training model was designed not only to improve theoretical understanding but also to strengthen practical competencies applicable in workplace settings.

2. Design Phase

Based on the findings from the analysis stage, the researchers designed two primary training products: a) ADDIE-based training management model book, b) Librarian competency training module. The design process included determining learning objectives, preparing training materials, selecting learning strategies, and developing evaluation instruments. The materials focused on library administration, information literacy services, digital technology utilization, and accreditation readiness.

The training design adopted adult learning principles emphasizing participant involvement, practical experiences, and collaborative learning activities (Knowles, 1980). Learning methods included lectures, discussions, simulations, and practical exercises to create active and meaningful learning experiences.

The design phase also integrated accreditation standards into the training content to ensure that the developed competencies aligned with institutional quality requirements. This integration strengthened the practical relevance of the training model and supported the improvement of school library quality.

3. Development Phase

The development phase involved producing and validating the training products before implementation. Validation was conducted by experts to evaluate several aspects, including:

- a) Content feasibility
- b) Language clarity
- c) Visual appearance
- d) Practical usability
- e) Relevance to participant needs

The validation results indicated that the products were categorized as feasible with minor revisions. Suggestions from validators were used to improve the quality of the model book and training modules, particularly regarding language consistency, instructional clarity, and visual presentation.

This stage ensured that the developed products met academic and practical standards before being implemented in training activities. The validation process is consistent with instructional design theory which emphasizes the importance of expert review in product development to enhance learning effectiveness (Branch, 2009).

4. Implementation Phase

The implementation phase was conducted in two stages:

1. Limited group trial involving 5 librarians on January 15, 2026
2. Large group trial involving 17 librarians from 9 schools on February 4, 2026

During implementation, participants received training modules and model books as learning resources. The training activities were facilitated by qualified resource persons and applied active learning strategies. Participants were encouraged to engage in discussions, simulations, and practical exercises related to school library management.

The implementation process demonstrated high participant enthusiasm and active involvement throughout the training sessions. Librarians showed positive responses toward the training materials because the content was directly related to their professional responsibilities and accreditation preparation needs.

The use of interactive learning methods contributed to participant engagement and facilitated competency improvement. According to Pribadi (2020), active learning approaches improve training effectiveness by encouraging participants to apply knowledge directly through practical experiences.

5. Evaluation Phase

The evaluation phase assessed the effectiveness of the training model using pretest and posttest competency tests. Statistical analysis was conducted using SPSS software, including normality testing, paired sample t-test analysis, and N-Gain score analysis.

a. Normality Test

The Shapiro–Wilk normality test was used to determine whether the data were normally distributed.

Limited Group Trial

- a) Pretest significance = 0.814
- b) Posttest significance = 0.119

Large Group Trial

- a) Pretest significance = 0.290
- b) Posttest significance = 0.090

All significance values were greater than 0.05, indicating that the data were normally distributed. Therefore, parametric statistical analysis using paired sample t-test could be applied.

b. Paired Sample T-Test

The paired sample t-test results showed significant differences between pretest and posttest scores.

Limited Group Trial

- a) Pretest mean = 53.00
- b) Posttest mean = 90.00

Large Group Trial

- a) Pretest mean = 58.68
- b) Posttest mean = 92.35

The results indicate substantial improvement in participant competencies after participating in the training program. The increase in scores demonstrates that the ADDIE-based training model effectively enhanced librarians' knowledge and skills.

These findings support Kirkpatrick's training evaluation theory which emphasizes that effective training programs should produce measurable improvements in learning outcomes (Kirkpatrick, 2006).

c. N-Gain Analysis

The N-Gain analysis was conducted to determine the effectiveness level of the training model.

N-Gain Criteria

$g \geq 0.70$ = High

$0.30 \leq g < 0.70$ = Moderate

$g < 0.30$ = Low

Limited Trial Average N-Gain = 0.79 (High Category)

Large Trial Average N-Gain = 0.81 (High Category)

The N-Gain results indicate that the training model achieved high effectiveness in improving librarian competencies. The findings demonstrate that participants experienced significant learning gains after participating in the training activities.

Discussion

The findings demonstrate that the ADDIE-based training management model successfully improved the competencies of school librarians in Binjai City. The systematic implementation of the ADDIE framework enabled the researchers to identify participant needs, design relevant learning materials, develop validated products, implement interactive training activities, and evaluate learning outcomes comprehensively.

The significant improvement in posttest scores indicates that the training model effectively enhanced librarian competencies in library management, information services, technology utilization, and accreditation preparation. The integration of accreditation standards into the training materials strengthened the practical relevance of the program and enabled participants to directly apply the acquired knowledge in their workplace environments.

The results align with instructional design theory which states that systematic and structured learning models improve training effectiveness and participant performance. Furthermore, the active learning strategies applied during implementation contributed to participant engagement and facilitated competency development.

This study also highlights the importance of professional development programs for school librarians. Continuous competency improvement is necessary to support educational quality and accreditation achievement in schools. Therefore, the developed model can serve as a strategic approach for improving librarian professionalism and strengthening school library management. Overall, the study successfully produced an ADDIE-based training management model that is valid, feasible, and effective. The research objectives were achieved through the development of structured training products, expert validation confirming feasibility, and empirical testing demonstrating significant competency improvement. The model can be implemented as an alternative training strategy to support sustainable professional development for school librarians.

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