

The Effectiveness of ADDIE-Based Negotiation Training among University Students

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Abstract

This study examines the effectiveness of an ADDIE-based negotiation training program implemented for university students from multiple institutions. Using a quantitative one-group pre-test–post-test design, the study evaluates whether the structured application of the ADDIE instructional design model leads to measurable improvements in negotiation skills. Data were collected through pre-training and post-training surveys and analyzed using a paired-samples t-test. The results indicate a statistically significant increase in participants' post-test scores compared to pre-test scores, confirming the effectiveness of the training intervention. The findings further demonstrate that the systematic alignment of needs analysis, instructional design, material development, interactive implementation, and quantitative evaluation contributed to positive learning outcomes. This study contributes to the literature on instructional design and talent development by providing empirical evidence that ADDIE-based training can effectively enhance negotiation skills in higher education contexts.

Abstrak

Studi ini meneliti efektivitas program pelatihan negosiasi berbasis ADDIE yang diimplementasikan untuk mahasiswa dari berbagai institusi. Menggunakan desain pra-uji dan pasca-uji satu kelompok kuantitatif, studi ini mengevaluasi apakah penerapan terstruktur model desain instruksional ADDIE menghasilkan peningkatan terukur dalam keterampilan negosiasi. Data dikumpulkan melalui survei pra-pelatihan dan pasca-pelatihan dan dianalisis menggunakan uji t sampel berpasangan. Hasil menunjukkan peningkatan yang signifikan secara statistik pada skor pasca-uji peserta dibandingkan dengan skor pra-uji, yang mengkonfirmasi efektivitas intervensi pelatihan. Temuan lebih lanjut menunjukkan bahwa penyesuaian sistematis analisis kebutuhan, desain instruksional, pengembangan materi, implementasi interaktif, dan evaluasi kuantitatif berkontribusi pada hasil pembelajaran yang positif. Studi ini berkontribusi pada literatur tentang desain instruksional dan pengembangan bakat dengan memberikan bukti empiris bahwa pelatihan berbasis ADDIE dapat secara efektif meningkatkan keterampilan negosiasi dalam konteks pendidikan tinggi.



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Introduction

Negotiation skills have emerged as a critical competency for future talents in an increasingly complex and competitive professional landscape. Negotiation is no longer limited to formal business transactions but is embedded in various aspects of professional and academic life, including teamwork, leadership, conflict resolution, and decision-making. Research has shown that negotiation competence is closely associated with communication effectiveness, problem-solving ability, and collaborative performance in organizational contexts (Fisher *et al.*, 2011). As organizations demand graduates who are not only technically competent but also capable of managing interpersonal dynamics effectively, higher education institutions are expected to play a strategic role in developing students' negotiation capabilities as part of early talent development (Zamsiswaya *et al.*, 2024).

Based on talent management perspective, negotiation skills are categorized as high-impact soft skills that contribute to individual performance, employability, and long-term career success. Soft skills development has been recognized as a key element of talent readiness and workforce sustainability, particularly in preparing students for complex and dynamic work environments (Robles, 2012). Effective negotiation abilities enable individuals to communicate persuasively, manage conflicts constructively, and achieve mutually beneficial outcomes in professional settings (Lewicki *et al.*, 2020). However, many university graduates enter the workforce with limited exposure to structured negotiation training, relying primarily on theoretical knowledge rather than practical skill mastery, which creates a gap between academic learning and workplace expectations.

Training effectiveness is closely linked to the instructional design model used to structure the learning process. Instructional design models provide a systematic framework to align learning objectives, content, instructional strategies, and evaluation methods. Among various models, the ADDIE model, consisting of Analysis, Design, Development, Implementation, and Evaluation is one of the most widely adopted frameworks in educational and training contexts. The ADDIE model emphasizes a structured yet flexible approach that allows training designers to identify learners' needs, design relevant learning experiences, develop appropriate materials, implement training effectively, and evaluate learning outcomes comprehensively (Zamsiswaya *et al.*, 2024).

The ADDIE model has been extensively applied across different educational and training settings, demonstrating its effectiveness in improving learning quality and training

outcomes. Prior studies show that ADDIE-based instructional designs contribute to better alignment between learning objectives and instructional strategies, leading to improved participant engagement and learning effectiveness. The model's systematic nature also supports continuous improvement through evaluation and feedback, making it particularly suitable for skill-based training programs that require iterative refinement.

Despite its widespread use, the application of the ADDIE model in soft skills training (particularly negotiation training) remains relatively underexplored, especially within the context of higher education and talent development. Existing studies on ADDIE largely focus on curriculum development, e-learning systems, or subject-specific instruction, while fewer studies empirically examine its effectiveness in developing interpersonal and professional skills. Moreover, many training evaluations rely on subjective participant perceptions rather than objective measures of learning outcomes, limiting the ability to assess actual skill improvement.

To address this limitation, training evaluation models emphasize the importance of measuring learning outcomes through objective assessment tools. Pre-test and post-test designs are commonly used to evaluate whether a training intervention leads to significant improvements in participants' knowledge and skills. By comparing participants' performance before and after the training, researchers can assess the effectiveness of the instructional design and the impact of the training program on skill development. This approach is particularly relevant for negotiation training, where improvements in cognitive understanding and practical competence can be measured quantitatively.

Several empirical studies suggest that ADDIE-based instructional interventions, when combined with appropriate assessment strategies, can produce significant improvements in learning outcomes. For example, studies implementing ADDIE in experimental learning contexts report statistically significant differences between pre-training and post-training performance, indicating the model's effectiveness in supporting learning gains (Sihombing *et al.*, 2025). These findings suggest that ADDIE provides a robust framework not only for designing training programs but also for evaluating their effectiveness through measurable outcomes.

Based on context of talent management, early exposure to structured negotiation training can be viewed as an investment in the talent pipeline. Universities serve as a critical stage for preparing future professionals, and structured training programs can bridge the gap between academic learning and workplace expectations. Negotiation training designed using

the ADDIE model aligns well with talent management objectives, as it focuses on competency development, performance improvement, and continuous evaluation. By equipping students with negotiation skills before entering the workforce, educational institutions contribute to the development of adaptable and competitive talents.

Another important aspect of negotiation training is its potential long-term impact on participants' professional skill development. While immediate post-training improvements are important, training programs are also expected to produce sustainable learning outcomes that can be transferred to future professional contexts. The ADDIE model's emphasis on evaluation allows training designers to assess not only short-term learning gains but also the potential for long-term skill application. This aligns with contemporary talent development frameworks that emphasize lifelong learning and continuous skill enhancement.

This study focuses on evaluating an ADDIE-based negotiation training program implemented for university students from different institutions. The training was designed to address identified learning needs, incorporating structured content, interactive learning activities, and practical negotiation exercises. The use of participants from multiple universities enhances the diversity of the sample and increases the relevance of the findings for broader educational and talent development contexts.

This study employs a quantitative pre-test and post-test design to assess the effectiveness of the training program. Participants completed a pre-test prior to the training to measure baseline negotiation knowledge and skills, followed by a post-test after the training to evaluate learning outcomes. This design allows for an objective comparison of participants' performance before and after the intervention, providing empirical evidence of the training's effectiveness. The use of quantitative data analysis strengthens the study's methodological rigor and supports evidence-based conclusions.

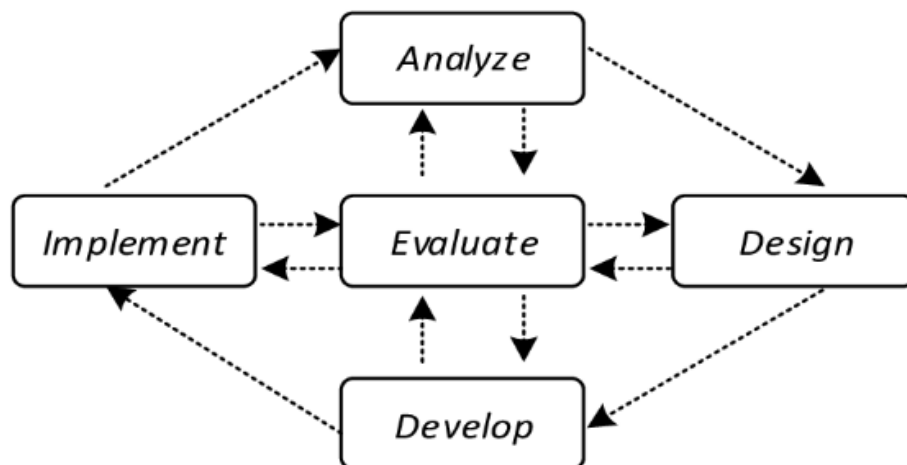
The contribution of this study is twofold. First, it extends the literature on instructional design and training effectiveness by providing empirical evidence on the application of the ADDIE model in negotiation skills training. Second, it contributes to talent management literature by highlighting the role of structured training programs in developing essential soft skills among university students. The findings are expected to provide practical insights for educators, trainers, and institutions seeking to design effective, outcome-oriented training programs that support early talent development.

Negotiation skills are a critical component of professional competence and talent readiness. The ADDIE model offers a systematic framework for designing and evaluating

training programs aimed at developing these skills. By examining the effectiveness of an ADDIE-based negotiation training program through pre-test and post-test analysis, this study seeks to demonstrate how structured instructional design can produce positive learning outcomes and support the development of future talents.

Research Method

This study used a quantitative one-group pre-test–post-test design to evaluate whether an ADDIE-based negotiation training was effective for university students from different institutions. The training program was designed and delivered using the five ADDIE phases (Analysis, Design, Development, Implementation, Evaluation) to ensure systematic alignment between learners’ needs, learning objectives, learning activities/materials, delivery, and outcome evaluation (Zamsiswaya et al., 2024).



Picture 1. ADDIE Model

Source: Sindu *et al.*, (2021)

The analysis phase identified participants’ baseline negotiation competence and learning needs using the pre-test and initial observation, the design phase defined competency-based learning objectives, session flow, learning strategies, and assessment plan, the development phase produced training materials and practice activities (e.g., negotiation cases/role plays) and finalized the assessment instrument, the implementation phase delivered the training in an interactive format emphasizing practice and feedback, and the evaluation phase assessed learning outcomes by comparing pre-test and post-test scores to determine training impact.

Participants were students from multiple universities who attended the training and completed both assessments. The primary instrument was a pre-test and post-test measuring

negotiation-related knowledge/skills using the same structure to ensure comparability. For analysis, difference scores (post-test - pre-test) were tested for normality, if the assumption was met, a paired-samples t-test was used to test whether post-test scores were significantly higher than pre-test scores, consistent with prior quantitative studies that apply prerequisite testing and t-test-based hypothesis testing to evaluate ADDIE-driven interventions (Sihombing et al., 2025). If normality was not met, a Wilcoxon signed-rank test was applied as a non-parametric alternative.

Result and Discussion

1. Descriptive Analysis

Mean of Pretest	Mean of Post Test	Differences of Scores
5.00	4.67	-.33
2.78	4.50	1.72
4.00	4.50	.50
4.11	4.17	.06
3.33	4.83	1.50
3.67	4.00	.33
3.44	4.83	1.39
3.56	4.67	1.11
4.44	5.00	.56
3.78	4.50	.72
4.44	5.00	.56
3.56	4.67	1.11
5.00	5.00	.00

The descriptive analysis shows that the mean pre-test score of the participants was 3.89 (SD = 0.65), while the mean post-test score increased to 4.63 (SD = 0.30). This indicates an observable improvement in participants' negotiation-related performance after attending the training program. The higher post-test mean, combined with a lower standard deviation, suggests not only an increase in performance but also a more consistent level of skill among participants following the training.

2. Normality Test

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DIFF_SC	.148	13	.200*	.772	13	.754
ORE						

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Prior to conducting hypothesis testing, a normality test was performed on the difference scores (post-test minus pre-test) to determine whether parametric testing was appropriate. The Shapiro–Wilk test results indicate a non-significant significance value ($p = 0.754 > 0.05$). This finding confirms that the difference scores are normally distributed, thus satisfying the assumption required for conducting a paired-samples t-test.

3. Paired T-Test Sample

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	3.8682	13	.61725	.18611
	POSTTEST	4.6064	13	.31781	.09582

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRETEST								
	POSTTEST	-.73818	.63210	.19059	-1.16284	-.31353	-3.425	12	.000

A paired-samples t-test was conducted to compare participants' pre-test and post-

test scores. The results show a statistically significant difference between pre-test and post-test scores ($t(12) = -3.43, p = 0.000$). The negative t-value indicates that the post-test scores were significantly higher than the pre-test scores. Therefore, the null hypothesis stating that there is no difference between pre-test and post-test scores is rejected. The 95% confidence interval for the mean difference ranges from -1.16 to -0.31, which does not include zero. This further supports the conclusion that the observed improvement in post-test scores is statistically significant and not due to random variation.

The statistically significant increase in post-test scores demonstrates that the ADDIE-based negotiation training was effective in improving participants' negotiation skills. The results indicate that the training program successfully enhanced participants' competencies compared to their initial skill levels measured prior to the intervention. The improvement in post-test scores suggests that the training program not only produced immediate learning gains but also contributed positively to participants' skill development. From a talent management perspective, this finding supports the role of structured, ADDIE-based training programs in developing essential soft skills among university students and preparing them for future professional challenges.

4. ADDIE Analysis

Table 1 presents a structured overview of the application of the ADDIE instructional design model in the negotiation training program. The table summarizes the key procedures and general indicators for each ADDIE component, serving as a framework to support the subsequent discussion that interprets the quantitative findings and explains how each phase contributed to the observed training effectiveness.

Table 1. ADDIE Instructions

ADDIE Component	Procedure (Specific to Negotiation Training)	General Applied	Indicators
Analyze	Identification of negotiation skill gaps among participants through pre-training survey and pre-test, analysis of participants' baseline competencies and learning needs	(1) Validation of training needs (2) Determination of instructional objectives (3) Analysis of learner characteristics	

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		(4) Audit of available learning resources (5) Adjustment of training management plan
Design	Design of structured negotiation training sequence including power-up video, material session, role play, and quiz aligned with learning objectives	(1) Task inventory formulation (2) Development of performance-based learning objectives (3) Design of assessment strategies (pre-test, quiz, post-test) (4) Alignment of learning strategies with training outcomes
Develop	Development and validation of negotiation materials, role-play scenarios, quiz instruments, and pre-test/post-test questionnaires	(1) Content development (2) Selection and development of supporting media (3) Development of learner guidance (4) Development of facilitator guidance (5) Formative revision (6) Instrument trial and refinement
Implement	Implementation of negotiation training through interactive delivery including video-based engagement, material presentation, role play, and participant feedback	(1) Learner involvement (2) Facilitator involvement (3) Active learning environment preparation
Evaluate	Evaluation of training effectiveness using quantitative pre-test and post-test analysis, supported by quiz results and participant feedback	(1) Determination of evaluation criteria (2) Selection of evaluation tools (3) Data analysis and revision planning

Source: Instructional Design: ADDIE Approach

1. Analyze Phase

The analysis phase was conducted prior to the training through a pre-training

survey and pre-test, which aimed to identify participants' initial negotiation competencies and learning needs. The quantitative results showed that participants' pre-test scores were relatively moderate, indicating that while participants possessed basic awareness of negotiation concepts, their practical understanding and strategic application were still limited. This finding justified the need for a structured negotiation training program focusing on both conceptual understanding and experiential learning.

In addition to the quantitative baseline, contextual analysis was also performed by considering the learning setting and participant characteristics. The training was attended by members of any students from different universities, which implied a relatively heterogeneous participant profile in terms of organizational exposure but varied individual negotiation experience. The fixed time and location set by the organizer further emphasized the need for an efficient and well-structured instructional design to maximize learning outcomes within a limited timeframe.

2. Design Phase

Based on the analysis results, the training was designed around the theme "Voices into Action: Building Bridges through Effective Negotiation", which reflects the core learning objective of transforming participants' ideas and perspectives into constructive negotiation outcomes. The instructional design intentionally combined cognitive, behavioral, and reflective learning components to address the identified skill gaps.

The learning sequence was structured progressively, beginning with a power-up video to stimulate motivation and contextual awareness, followed by a material session to provide foundational negotiation concepts. Interactive activities such as Q&A sessions were integrated to clarify understanding and encourage participant engagement. The design also emphasized experiential learning through role-play simulations, which allowed participants to practice negotiation strategies in realistic scenarios. This structured flow ensured alignment between learning objectives, instructional methods, and assessment strategies, including pre-test, quiz, and post-test instruments.

3. Develop Phase

During the development phase, instructional materials and assessment tools were created and refined to support the designed learning experience. Presentation materials (PPT) were developed to emphasize key negotiation principles, communication strategies, and problem-solving approaches relevant to organizational contexts. The power-up video was selected to create an engaging entry point that aligned with the training theme and prepared participants psychologically for the learning process.

Role-play scenarios were carefully developed to reflect realistic negotiation situations that participants might encounter in organizational or leadership contexts. These scenarios were designed to encourage active participation, collaboration, and critical thinking. In addition, quizzes were developed to assess participants' immediate understanding of the material. The quiz results, which showed that participants scored above the average with most answers correct, indicate that the developed materials were clear, relevant, and effective in facilitating cognitive learning.

4. Implement Phase

The implementation phase involved delivering the training according to the planned rundown and learning methods. The training took place at the B303, Building B, President University, providing a formal learning environment that supported focused participation. The delivery combined lecture-based presentation, interactive discussions, and experiential learning, ensuring that participants remained actively engaged throughout the session.



One of the most critical components of the implementation phase was the role-play simulation, which served as the primary experiential learning activity. Observations during this session and overall feedback indicated high participant engagement and positive performance. Participants demonstrated improved communication clarity, negotiation confidence, and responsiveness during simulations. The structured feedback session following the role play further reinforced learning by allowing participants to reflect on their performance and receive constructive input. This active and reflective implementation approach contributed significantly to the observed improvement in post-test scores.

5. Evaluate Phase

The evaluation phase assessed the effectiveness of the negotiation training using both quantitative and qualitative indicators. Quantitatively, the comparison between pre-test and post-test scores revealed a statistically significant improvement, confirming that the training achieved its learning objectives. The normal distribution of difference scores and the significant paired-samples t-test results provide empirical evidence that the ADDIE-based training had a positive impact on participants' negotiation skills.

Qualitatively, supporting evidence from quiz results and participant feedback further strengthened the evaluation findings. High quiz scores indicated strong cognitive understanding, while positive feedback from the role-play session

suggested meaningful skill application. The post-training survey functioned as a summative evaluation, capturing participants' perceptions of learning effectiveness and reinforcing the quantitative findings. Overall, the evaluation results demonstrate that the systematic application of the ADDIE model resulted in a well-aligned, effective, and impactful negotiation training program.

Conclusion

This study evaluated the effectiveness of a negotiation training program designed using the ADDIE instructional design model and implemented for university students. Using a quantitative one-group pre-test–post-test design, the findings demonstrate a statistically significant improvement in participants' negotiation skills after the training. The results confirm that the training program achieved its learning objectives and had a positive impact on participants' skill development.

The significant increase in post-test scores can be explained by the systematic application of the ADDIE model across all instructional phases. The analysis phase ensured that the training addressed participants' actual skill gaps, while the design and development phases produced a structured learning sequence and relevant instructional materials. Furthermore, the implementation phase, which emphasized interactive activities such as role-play simulations and feedback sessions, facilitated effective knowledge transfer and skill application. Finally, the evaluation phase provided empirical evidence of training effectiveness through rigorous quantitative analysis.

Overall, this study contributes to the literature on instructional design and talent development by demonstrating that ADDIE-based training can effectively enhance negotiation skills in an educational context. The findings highlight the importance of structured, data-driven training design in preparing students with essential soft skills for future professional and organizational challenges. Based on the findings, several recommendations can be proposed. First, educational institutions and training organizers are encouraged to adopt systematic instructional design models, such as the ADDIE model, when developing soft skills training programs. A structured approach ensures alignment between learning objectives, instructional activities, and evaluation methods, which is critical for achieving measurable learning outcomes.

Second, future negotiation training programs should further strengthen experiential

learning components, particularly role-play simulations and structured feedback, as these activities were shown to support skill acquisition and participant engagement. Expanding the variety of negotiation scenarios may also enhance the applicability of training outcomes to different professional contexts. Third, future research is recommended to involve larger and more diverse participant samples and to include comparison groups to strengthen causal inference. Longitudinal studies are also suggested to examine the sustainability of negotiation skill development over time and its transfer to real-world professional settings.

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