

## AI AND GRIT TO IMPROVE PRINCIPALS' MANAGERIAL COMPETENCY USING THE ADDIE-SDGS MODEL

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### Abstract

**Introduction:** School performance and instructional quality are directly impacted by the managerial competencies that principals must develop through effective training. In today's changing educational environment, strengths-based and resilience-building techniques are crucial, but they are frequently not integrated into traditional training paradigms. Together with Appreciative Inquiry (AI) and Grit, the ADDIE framework provides a thorough method for creating durable leadership skills that are in line with the objectives of global development. **Objective:** Using the ADDIE framework in conjunction with Appreciative Inquiry and Grit, this study attempts to create a training management model for school principals that is focused on the Sustainable Development Goals (SDGs) in order to enhance their managerial skills. **Methods:** Expert interviews, focus groups, and observations were used to gather qualitative data using a mixed-methods methodology in the context of research and development (R&D). N-Gain Score computations, paired-sample t-tests, and validity testing were used to assess quantitative data. The participants were purposefully chosen high school principals from the North Sumatra Region I Education Office. **Results:** With an Aiken's V of 0.90, the created SDGs training management model showed high validity. With an N-Gain Score of 0.73, which is considered strong, the model clearly enhanced managerial competencies. While the Grit component improved resilience and tenacity in handling managerial obstacles, the Appreciative Inquiry component promoted strengths-based leadership. Results indicate that combining ADDIE with AI and Grit results in a versatile and successful training approach that fosters long-term leadership growth. By focusing on resilience and positive capabilities, this method differs from traditional problem-focused training and meets the demands of modern educational leadership. The model's versatility and potential for digitization further increase its suitability for use in a range of educational settings. **Conclusions:** An inventive SDGs-focused training management strategy for school principals that incorporates ADDIE, Appreciative Inquiry, and Grit was successfully created and validated by the study. By encouraging strengths and resilience, this model successfully improves managerial competences and provides insightful advice for legislators and educational institutions looking to improve principal leadership.

**Keywords:** *ADDIE training model, appreciative inquiry (AI), grit, managerial competence, school principals, sustainable development goals (SDGs)*

### INTRODUCTION

The foundation of human resource development, education is essential for producing exceptional and competitive people. As leaders in charge of managing resources, improving learning quality, and successfully implementing a school's vision and goal, school administrators have a crucial place in the educational environment. A supportive, efficient, and flexible learning environment requires principals with good managerial skills. However, the actual situation indicates that Indonesian school principals lack a substantial managerial competency gap, which impedes the best possible school administration. This problem is brought to light by the Ministry of Education and Culture's (2019) competency assessment report, which shows that Indonesian school principals' average competency

exam score is a comparatively low 56.37. Compared to Yogyakarta (61.47), the average score for principals in North Sumatra Province is much lower at 53.71. Sixty-five percent of school principals did not know how to create strategic plans that were in line with the school's vision and mission, according to an initial survey done at the North Sumatra Region I Education Office Branch. Furthermore, 60% had trouble making decisions based on facts, and 70% had trouble managing their people resources. Learning innovation, school administration, and the capacity to successfully lead organizational change are all negatively impacted by these managerial competency gaps.

Numerous national and international training initiatives have been put in place to fill these shortages. The Ministry of Education, Culture, Research, and Technology in Indonesia organizes the Principal Strengthening Training program, which is the main means of delivering principal training. The In-On-In approach is a popular paradigm for this training that combines advanced evaluation (in-service learning 2), on-the-job learning, and in-class learning (in-service learning 1). The curriculum in this model is comprehensive and cohesive, according to research like Andriani et al. (2021), but it also has flaws, especially when it comes to improving the quality of mentoring during internships and coordinating the curriculum with existing principal responsibilities.

Similar to this, Wahyudi et al. (2024) put up a managerial competency training model that is grounded in participatory humanism and emphasizes teamwork, communication, decision-making, and participatory management. Although this strategy showed that school principals were more motivated and satisfied with their jobs, it also had some serious drawbacks, most notably the lack of a strength-based strategy that capitalized on the principals' current skills. The majority of training programs currently in use are problem-focused, with the goal of identifying and resolving leadership shortcomings. This strategy, however, frequently misses the chance to investigate and optimize school principals' abilities. Using the CIPP (Context, Input, Process, Product) evaluation paradigm, Kartika (2018) and other evaluations of these programs highlight areas that require development while revealing clear objectives and legal frameworks. The quality of the materials, program implementation techniques, and instructor competency are important concerns. These flaws make it unclear if these training courses adequately address the real-world requirements of school principals. Furthermore, the true impact of these training programs is still unclear, even if their goal is to improve principals' performance. According to research by Bush (2018) and Wibowo et al. (2021), many principals still have difficulty putting into practice efficient management techniques that affect student achievement. Bush criticizes the lack of training given to new principals, who frequently rely on unofficial apprenticeship programs that do not provide them with the necessary leadership skills. This suggests a serious weakness in the methodical training of leaders.

A popular framework for training management, the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) is praised for its methodical and structured approach. Its use in principal training, however, exposes significant flaws. First, there is no strength-based strategy in the model to maximize participants' potential. Secondly, the development of resilience and perseverance for long-term managerial issues is not sufficiently addressed. Third, the ADDIE model's linear structure limits its ability to adapt to dynamic feedback during training. Although ADDIE provides methodical planning, Cheung (2016) contends that it is not sufficiently adaptable to the changing and dynamic needs of school leaders.

Internationally, nations like Singapore and Finland provide school principals with more creative training methods.

Transformational leadership training in Finland places a strong emphasis on teamwork, collective decision-making, and self-evaluation of leadership potential. The Singaporean model places a strong emphasis on cultural congruence, ongoing professional development, and instructional leadership. Case study-based learning and group activities are common components of Singaporean training (Lahtero et al., 2017; Cheng, 2017; Huang & Benoliel, 2023; Tan, 2022). These global best practices underscore the necessity for Indonesia to improve its major training models, especially with regard to training feedback systems' flexibility, leadership resilience, and personalization.

In order to fill these gaps, this study suggests creating a training management model based on ADDIE that incorporates Grit and Appreciative Inquiry (AI). Through the use of participants' strengths and the promotion of resilience and tenacity in leadership, this innovative approach seeks to offer a thorough and flexible framework for principal training. David Cooperrider created the collaborative, strength-based approach to organizational change known as Appreciative Inquiry (AI), which is consistent with positive psychology concepts. The goal of AI is to find and magnify the good aspects of people and organizations, then use these strengths to plan and execute transformation (Cockell et al., 2020; Cooperrider et al., 2013). By creating a supportive and productive school culture, research shows that AI improves the efficacy of school leadership (Hakkari et al., 2022). According to Cooper and Fry (2020), AI was demonstrated to give organizations dealing with severe difficulties hope and direction during the COVID-19 epidemic. AI-driven strategic planning also improves institutional and individual performance (He & Oxendine, 2019; White, 2022). According to Duckworth (2016), grit, on the other hand, stresses tenacity and enthusiasm for long-term objectives. The goal of a grit-based training strategy is to give students the mental fortitude they need to face obstacles head-on. According to studies by Caza and Posner (2019) and Muenks et al. (2017), grit is essential

for developing good leadership. Grit-rich principals are better able to deal with hardship, stay focused on long-term goals, and motivate their staff to keep going. Furthermore, because resilient leaders foster encouraging and inspiring work environments, Saeed and Khan (2022) discovered that grit had a significant impact on teachers' job satisfaction.

There are various benefits of incorporating AI and Grit into the ADDIE framework. First, AI gives the methodical ADDIE structure a strength-based component that allows participants to examine and enhance their current competencies. Second, by encouraging resiliency and persistence, grit equips principals to handle enduring difficulties. Third, the improved model takes a more dynamic and iterative approach, which enables ongoing training-related input and modifications. Last but not least, a need analysis carried out at the North Sumatra Region I Education Office Branch revealed that the model is data-driven and customized to meet the unique requirements of school principals.

School principals are under growing pressure to use technology in the digital age for online learner management, data-driven decision-making, and school administration. They also have to deal with parents', students', and teachers' high expectations for creative teaching methods. Strong managerial abilities are necessary to meet these obstacles, but so are psychological fortitude and flexibility. Studies by Mahfouz (2018), Urick et al. (2021), and Adams et al. (2017) highlight the value of resilience in leadership. Successful principals are more likely to be flexible and creative in their problem-solving (Jauro et al., 2023). Nonetheless, school leadership has a substantial psychological cost, which frequently leads to high turnover rates as a result of burnout. Principals must have good coping mechanisms in order to manage their personal and professional obligations. By giving school leaders a positive, resilient, and adaptable mindset, the training strategy suggested by this study helps them overcome these difficulties and prepares them to lead in challenging and changing situations.

By creating a novel training management model that incorporates grit and appreciative inquiry into the ADDIE framework, this study closes a significant gap in the literature. Through the integration of resilience-focused and strengths-based tactics, the model provides a comprehensive method for improving school administrators' managerial skills. By offering a new framework for principal training in Indonesia that satisfies local demands and is in line with worldwide best practices, this research advances both the academic and practical spheres. The proposed model not only improves technical competencies but also cultivates visionary, resilient, and committed educational leaders capable of driving sustainable transformation in Indonesia's education system. The findings of this study are expected to inform policy development and serve as a reference for educational institutions seeking to enhance school leadership effectiveness in the modern era.

## LITERATURE REVIEW

### Managerial Competence

Through education, training, and self-directed learning using a variety of learning materials, competence—which is defined as proficiency and ability—can be attained [1]. When it comes to achieving workplace success, competence is crucial, particularly in positions that demand specific qualifications from those performing the work. Competence is linked to the objectives to be met in the workplace, to the drive to become proficient in the necessary abilities to perform the work, and, more generally, to the endeavor to initiate events rather than take a passive role. Another definition of competence is the capacity to perform tasks that are supported by the work attitude required by the job and are founded on knowledge and skills [2]. The concept of competency can be understood in a number of ways, including spiritual as well as mental and physical. If an individual satisfies the requirements in terms of his attitude, knowledge, abilities, and work output that are established or acknowledged by an organization or government, they are deemed competent to complete the assignment (Komtri, 2017).

The definition of competence is, in theory, the same as the definition given by Robbins et al. (2014), who state that competence is the capacity of an individual to perform a variety of tasks in a job, which is based on two factors: intellectual ability and physical ability. More specifically, Spencer claimed that competence demonstrates the features that underpin behavior and characterizes the motivations, personal traits, values, self-concept, and knowledge or expertise that a high-achieving employee contributes to the workplace (Suriansyah & Aslamiah, 2012). The capacity, knowledge, authority, and power to make decisions are all components of competence [6]. Competence, on the other hand, is defined as a confluence of values, attitudes, abilities, and knowledge that are manifested in one's thought and behavior patterns. The fundamental quality of a person that is linked to the standard of effective performance requirements is their competence. According to the established standard criteria, competence not only assesses an individual's behavior and performance but also decides whether or not they accomplish their work effectively [7]. The aforementioned viewpoint makes it abundantly evident that a competency requires information, abilities, and attitudes to be supported; hence, a particular competency cannot exist without these elements. Competence can be judged by a person's knowledge, abilities, and attitudes in carrying out a task or job in line with the performance standards (work ability). Competence thus demonstrates the information or abilities

that are most crucial in a certain industry and are marked by professionalism. Effective performance in a work or scenario is correlated with a person's competence. Competence refers to the fundamental characteristics or aspects of a person's personality that are deep and innate, as well as consistent conduct in a variety of situations and job tasks, which serves as motivation to reach goals and the drive to work hard to complete tasks efficiently. To effectively and efficiently run his school, the principal must possess managerial skills [8]. In accordance with Robbins' perspective, the principal's managerial competence can be interpreted as their capacity to effectively and efficiently plan, organize, lead, and control all school resources (Robbins et al., 2014).

### **Training Management**

Planning, organizing, carrying out, and assessing training are all included in the concept of training management [9]. Among the tasks involved in training management include goal-setting, program planning and design, implementation, monitoring, supervision, and control, and education and training development. Communities, companies, and individuals can all benefit from training that is managed appropriately and professionally. In order to accomplish training objectives effectively and efficiently, management in training is required as a methodical and planned endeavor to optimize all training components [10]. Curriculum, human resources, facilities/infrastructure, and expenses make up the management component. Forming, enhancing, and altering knowledge, attitudes, and behaviors in addition to abilities in order to meet specific criteria are the training objectives in issue [11]. The next step after establishing the objective is to prepare or create the training curriculum.

The practice of methodically altering employee behavior to accomplish organizational objectives is known as training planning. The necessity of exercise and its suggestions are determined by planning. establishing training plans and patterns in accordance with the guidelines, as well as training facilities and techniques. The first step in getting ready for the execution of education and training is creating a training program, which is quite important [12]. It can establish a training plan (identifying the need for education or training outside of training) in addition to its objective of creating a high-quality program that meets the objectives of participants and their companies. The initial step for a training learning designer is to investigate current learning models. Using models in learning program design helps create realistic and high-quality programs [13].

A program's design is a planning procedure that outlines the methodical order of activities. Three key components need to be taken into account: 1. Purpose: what should be accomplished; 2. Method: how to accomplish the objective; 3. Format: how to decide on the desired design. The training's execution phase comes after everything has been planned. The preparatory phase (administrative and educational preparation), the implementation phase, and the reporting phase comprise this implementation stage. Since the design of a training cannot be divorced from this education and training development activity, it is a continuation of the training design process [14]. It is crucial that officials involved in education and training understand their responsibilities and contributions, whether they are developing programs, implementing training, or doing both. Program development is the process of producing educational resources and activities and distributing them to trainees or students with the purpose of reaching predetermined, quantifiable learning objectives. Thus, a series of systematic procedures used to create educational programs and/or educational materials is the process of developing education and training.

### **Appreciative Inquiry (AI)**

According to Cooperrider & Whitney, Appreciative Inquiry is an asset-based strategy for social and organizational engagement that uses discourse and questions to assist participants identify possibilities, strengths, or advantages that already exist in their teams, communities, or organizations [15]. An asset-based, cooperative method of social and organizational engagement, Appreciative Inquiry (AI) employs conversations and questions to assist participants identify the opportunities or strengths in their team, company, or community. The fundamental ideas of positive psychology and positive education are applied in AI. Everybody has a positive core that can help them succeed, according to the AI approach [16], [17]. The organization's potential and asset lies in its positive core. Consequently, before moving on to the next phase of change planning, AI implementation starts by examining the organization's strengths, accomplishments, and positive aspects.

A concept and way of thought known as "appreciative inquiry" centers on teamwork in identifying the good in people, organizations, and the environment—past, present, and future [18]. Another argument is that we live in a time where seeing and revealing what is good and right is essential. The organization's human resources will undoubtedly become stronger if it emphasizes its positive aspects more, which will lead to sustainable development (Lewis et al., 2016). Appreciative inquiry is a combination of strengths-based practice and positive psychology [19]. Appreciative inquiry, an affirmative change approach, starts by identifying the best and most beneficial qualities that are already present in the living system and then developing, enhancing, and fortifying such qualities and capacities.



Members of the organization immediately become inspired and active participants in achieving the organization's goals and become a part of the collective experience through a systematic process of Appreciative Inquiry.

In organizations, examples of positive core include successful strategies and experiences, existing knowledge and wisdom, devoted customers, exemplary products and services, skills and behaviors, brand identity, reputation, processes and systems, leadership, values, vision, and so forth [20]. Positive core is made up of the best qualities of life systems. In addition to connecting with their strengths and abilities, persons or organizations who fit with their positive core also fire their positive emotions and broaden their perspectives to encompass new possibilities. (Kessel-Stratton, 2010). Focusing on the good things of the human experience gives people more energy and encourages them to stay involved in the research process. This implies that good experiences will help AI-inspired transformations and increase their chances of success since they promote participants' happiness and well-being [22]. Since AI basically seeks to use good emotions of well-being as a tool for change, it may be appropriate for studies that seek to enhance well-being over the long run.

### Concept of Grit (Passion and Perseverance)

Angela Duckworth introduced the grit theory. Grit, or persistence, is the ability to persevere and have a strong desire to accomplish long-term goals in the face of setbacks, problems, challenges, or despair. Grit is a psychological trait associated with tenacity and a strong drive to attain long-term objectives (Duckworth, 2016). According to Vivekananda (2018), grit is the degree to which a person exhibits the behavior of sustaining his zeal and persistence in trying situations in order to accomplish the anticipated long-term goals. Grit, on the other hand, is defined by the U.S. Department of Education as the ability to persevere in pursuing lofty or long-term objectives in the face of difficulties and setbacks by utilizing students' psychological resources, including academic mindsets, effortful control, and tactics. Working hard to overcome obstacles and sustaining interest and effort over time in the face of setbacks, obstacles, and difficulties are examples of grit [25].

Grit can also be defined as ambition for long-term objectives and character determination. Grit is a non-cognitive component that influences success and is a member of the characteristic personality group [26]. Grit is a quality that is comparable to self-control or consciousness and is particularly associated with long-term endurance in pursuit of one's objectives [27]. Perseverance, resilience, ambition, hard effort, the drive for success, and self-awareness are all aspects of grit in psychology [28]. One indicator of a person's ability to persevere through life's obstacles is their level of grit [29]. A person with strong grit will go to great lengths to overcome obstacles and keep up his efforts because he will be more capable of accomplishing his objectives and satisfying his needs or desires (Duckworth, 2016). The aforementioned explanation leads one to the conclusion that grit is the perseverance and passion needed to accomplish long-term objectives. Persistent people will continue to strive to make consistent decisions in order to achieve their predetermined goals.

## METHODS

### Participants

Purposive sampling procedures were used to choose study participants, guaranteeing that the individuals picked were pertinent to the study's goals and could offer insightful opinions on the creation and application of the training model. The North Sumatra Education Office Branch Region I was the site of this study. The study was conducted between February and August of 2024. The Branch of the Education Office of Region I of North Sumatra in the Medan region is the focus of the study presented in this paper. Purposive sampling strategies were used in this study to determine the samples for the research subjects.

### Procedure

1. Gathering Quantitative Data
2. A number of techniques were used to collect qualitative data, including:
3. Expert Interviews: Speaking with experts in education to acquire their perspectives on the development and application of the training model.
4. Focus Group Discussions (FGD): Encouraging conversations between interested parties to examine various viewpoints regarding the training approach.
5. Documentation Review: Examining current resources pertaining to the process of developing training models.

Following a methodical procedure that involved data transcription, coding, finding classification, and conclusion drawing, the qualitative data were thematically analyzed. Through the lenses of Grit and Appreciative Inquiry, in particular, this analysis sought to uncover recurrent themes and patterns relevant to the creation of the ADDIE training management model (Braun & Clarke, 2006).

## Quantitative Data Collection

The following methods were used to gather quantitative data:

1. Model Validation Questionnaires: These were given to specialists to evaluate the structure and content of the training model.

2. Training Model Trials: Pre- and post-test evaluations of school principals' managerial skills are used to gauge the model's efficacy.

Cronbach's Alpha was used to evaluate the instruments' reliability, and Aiken's V technique was used to determine the validity of the instruments by measuring expert agreement. Pre-test and post-test results were statistically analyzed to assess the efficacy of the training model. Levene's Test was used to evaluate homogeneity, and the Kolmogorov-Smirnov or Shapiro-Wilk procedures were used to test for normality. The N-Gain Score computation was used for a more nuanced understanding of training effectiveness, and the paired sample t-test was used to examine differences between pre-test and post-test scores.

## Data Analysis

Trainee input was analyzed using descriptive statistics to gauge satisfaction and the training model's perceived usefulness. Triangulation techniques were used to incorporate the results of both qualitative and quantitative assessments. Among them were:

1. Source triangulation: Verifying consistency and dependability by comparing findings from validation surveys, focus group discussions, and interviews.
2. Method Triangulation: Examining both qualitative and quantitative data to strengthen the validity of the inferences made.

The research will validate, measure, and evaluate the impact of the created training model on enhancing school principals' managerial competencies using this comprehensive analytical framework.

## RESULTS

### Research Findings

In order to create and assess a training model that would improve the managerial skills of school principals in North Sumatra, Indonesia, this study used a mixed-methods Research and Development (R&D) approach, guided by Romiszowski's ADDIE model (Analyze, Design, Develop, Implement, Evaluate). Branch Region I of the North Sumatra Education Office in Medan was the subject of the study, which was carried out between February and August 2024. A thorough grasp of the model's efficacy and influence was made possible by the combination of qualitative and quantitative data.

### Analysis Stage

Analyzing the target region's school principals' current managerial skills was the main goal of the first phase. 30 school principals were surveyed as part of a need assessment, which revealed important areas in need of development. Competencies in five areas were evaluated by the survey: data-driven decision-making, change leadership, human resource management, strategic planning, and school program evaluation.

**Table 1. Mean and Standard Deviation of Initial Competencies of School Principals**

No	Aspects of Managerial Competence	Mean( $\bar{x}$ )	Standard Deviation (SD)	Category
1	School Strategic Planning	3.00	0.75	Moderate
2	HR Management	2.80	0.90	Poor
3	Change Leadership	2.80	0.85	Poor
4	Decision	2.50	0.85	Poor
5	School Program Evaluation	4.00	0.70	Moderate
	Total Average	3.02	0.81	Moderate

Significant differences in principal competences are shown in Table 1. Although the evaluation of the school program showed a satisfactory level (Mean = 4.00), the ratings in the other four domains (Moderate or Poor categories) indicated that there was a significant need for improvement. As a result, the training model concentrated on improving data-driven decision-making, change leadership, human resource management, and strategic planning.

## Design Stage

Using Appreciative Inquiry (AI) and Grit as key pedagogical techniques, a training curriculum based on the ADDIE model was developed during the design phase. While Grit encouraged resiliency and persistence in the face of difficulties, AI made it easier to explore current strengths and potential. There were four units in the curriculum:

1. Appreciative Inquiry in School Leadership: Examining AI concepts and how they might be used to improve organizational culture and school administration.
2. Building Grit in School Management: Recognizing the importance of grit in leadership and creating plans to improve resilience.
3. Appreciative Inquiry-Based Strategic Planning: Creating school visions and strategies using strength-based SWOT analysis.
4. Implementing change management techniques that emphasize tenacity and resilience in conjunction with success assessment and reflective practice is known as "grit-based school management implementation and evaluation."

Case studies, simulations, reflective conversations, and experiential learning were among the teaching strategies used. Case studies of effective AI and Grit applications, realistic implementation instructions, and digital and print modules were all included in the training materials. Infographics, interactive systems, and motivational videos were examples of supplemental media. Additionally, training modules and a draft implementation guidebook were created.

Experts in education and training management collaborated to build and test a validation tool that included metrics for appropriateness, relevance, AI/Grit integration, and simplicity of use. Aiken's V was used to evaluate the validity of the instrument, while Cronbach's Alpha was used to evaluate its reliability. Figure 1 shows the Training Management Model diagram based on ADDIE, Grit, and Appreciative Inquiry.

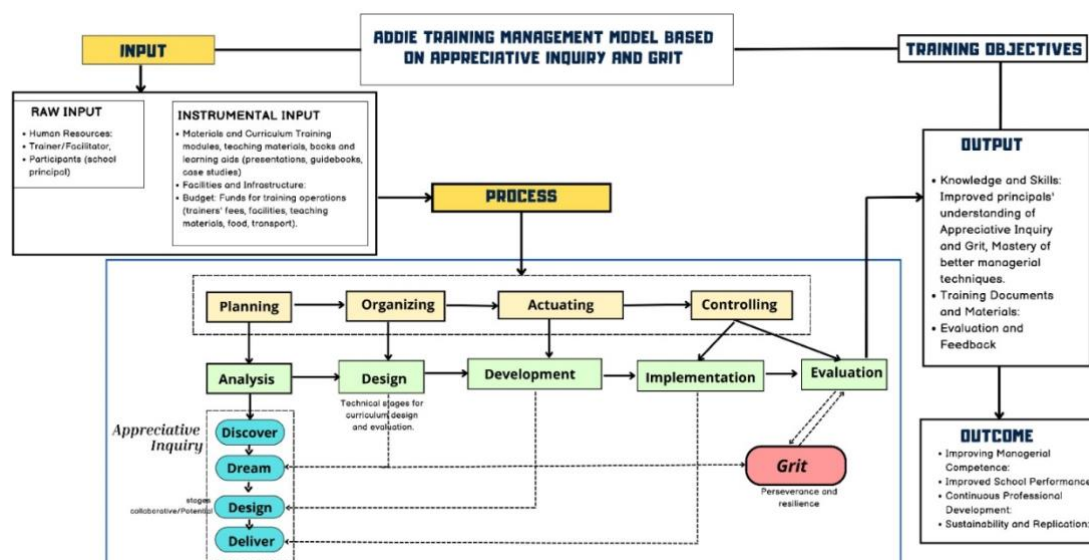


Figure 1. Final model of ADDIE training model based on AI and GRIT

## Development Stage

The third stage of the ADDIE model is called the Development Stage, and it is centered on producing training materials based on the design decided upon in the previous stage. In order to validate the model's efficacy before deployment, this stage required developing a variety of training aids, expert validation tests, and Focus Group Discussions (FGDs) with practitioners. Any necessary adjustments were then made. Using the concepts of grit and appreciative inquiry, training modules and instructional materials were developed during this phase. The training modules, which included a wide range of resources focused on strength- and resilience-based school leadership, were created in both print and digital media. A training model implementation guidebook was also created to act as the main resource for training facilitators and school principals. Case studies, simulated scenarios, and reflective activities were all incorporated in the training materials to help learners better understand the ideas being covered. A variety of learning materials were also developed to increase the training's efficacy. To give real-world examples of how grit and appreciative inquiry might be used in school leadership settings, interactive instructional videos were created. To aid in participants' comprehension, an infographic was also created that summarized the main ideas of the training program. Experts in education and training management carried out the validation to guarantee the viability of the training materials. Planning, organization, implementation (actuating), supervision, and assessment (controlling) were all included in this validation. A high degree of validity for the constructed model was revealed.

by the validation findings, which were compiled from Table 2 to Table 5. The training methodology based on Grit and Appreciative Inquiry is both relevant and feasible for improving school principals' administrative skills, as evidenced by the fact that most components have an Aiken's V value greater than 0.83.

**Table 2. Validation of Planning Aspects**

No	Validation Aspects	Expert 1	Expert 2	Expert 3	Aiken's V
1	Clarity of formulation of training objectives	5	4	5	0.92
2	Accuracy of training needs analysis	4	5	4	0.83
3	Model integration with Appreciative Inquiry	5	5	5	1
4	The relationship between the planning aspect in POAC and the ADDIE Analysis stage	4	4	5	0.83
5	Alignment of training objectives with Grit indicators	5	5	4	0.92
Average					0.90

**Table 3. Validation of Organizing Aspects**

No	Validation Aspects	Expert 1	Expert 2	Expert 3	Aiken's V
6	Clarity of structure and division of roles in the model	4	5	5	0.92
7	Accuracy of AI-based curriculum preparation	5	4	5	0.92
8	Suitability of material design with leadership	4	5	4	0.83
9	The relevance of organizing in POAC to the Design ADDIE stage	5	4	5	0.92
10	Availability of Grit-based modules and tools	4	4	5	0.83
Average					0.88

**Table 4. Validation of Implementation Aspects (Actuating)**

No	Validation Aspects	Expert 1	Expert 2	Expert 3	Aiken's V
11	Effectiveness of training methods	5	5	4	0.92
12	Participant engagement in AI	4	5	5	0.92
13	Clarity of the model implementation stages	5	4	5	0.92
14	The relationship between the implementation aspects in POAC and the Development and Implementation stage of ADDIE	4	5	4	0.83
15	The effectiveness of the model in building a Grit culture	5	5	5	1.00
Average					0.92

**Table 5. Validation of Supervision and Evaluation (Controlling) Aspects**

No	Validation Aspects	Expert 1	Expert 2	Expert 3	Aiken's V
16	Clarity of monitoring and evaluation systems	4	4	5	0.83
17	Accuracy of evaluation instruments	5	5	4	0.92
18	The relevance of training evaluation to AI	4	5	5	0.92



No	Validation Aspects	Expert 1	Expert 2	Expert 3	Aiken's V
19	The relationship between supervision in POAC and the ADDIE Evaluation stage	5	4	5	0.92
20	The effectiveness of Grit-based feedback	4	5	5	0.92
Average					0.90

To get firsthand input from possible users of the training model, focus group discussions (FGDs) were held with school administrators and education professionals in addition to expert validation. The objective of these conversations was to evaluate the model's suitability for practical settings and pinpoint opportunities for enhancement. The FGDs' feedback showed that the training model was well-liked and thought to be applicable to improving school administrators' administrative skills. Participants' suggestions were included into the training modules to better meet the needs of the field, especially with regard to case studies and content distribution techniques.

**Table 6. Results and Inputs from the FGD**

Aspects Discussed	Input from the FGD	Revision Actions
Case Studies	More real-world examples are needed	Adding more principal experience-based case studies
Delivery Method	The need for a more interactive approach	Developing more simulations and reflective discussions
Training Duration	Some participants proposed time flexibility	Provides learning options for time flexibility
Training Evaluation	There needs to be a more concrete assessment	Adding more structured evaluation instruments

The training's modules, instructional materials, and learning techniques were revised in response to the validation and focus group discussions, as indicated in Table 6. Changes were made to make case studies more pertinent to the actual difficulties faced by school principals and more contextual. Additionally, the assessment methodology incorporated input from both experts and FGD participants, increasing the training's efficacy in raising school administrators' administrative proficiency. Training items that were completed during the Development Stage are now prepared for testing during the Implementation Stage. Based on feedback from practitioners and experts, the model has been refined extensively, putting it in a position to improve school administrators' managing skills.

### Implementation Stage

The purpose of this study's Implementation Stage is to assess how well the training management model created using the validated design from the previous stage works. During this phase, school principals will participate in a series of training workshops that employ the ADDIE approach, which is based on grit and appreciative inquiry. Finding the model's suitability for real-world situations and getting participant input for future improvements are the main goals. Field testing and limited trials are the two stages of implementation. Choosing trial sites and participants, setting up training sessions, and creating instructional materials, modules, and assessment instruments are all part of the first phase of implementation preparation.

Through the use of techniques including group discussions, case studies, simulations, and reflections on leadership behaviors, the training programs cover a variety of topics related to Grit and Appreciative Inquiry. Formative assessments are conducted after each session to gauge participants' comprehension. Direct participant interaction, interviews, focus group discussions, and the recording of training sessions using field notes and video recordings are further methods used for monitoring and observation. Several important conclusions can be drawn from the implementation's outcomes. First off, there was a noticeable level of participant interest throughout the course. While the Grit-based approach helped participants develop motivation and tenacity, the Appreciative Inquiry method encouraged active examination of positive leadership experiences. Second, pre-test and post-test results showed that participants' comprehension of grit-based leadership ideas had significantly improved. The ability of the participants to use positive and solution-focused leadership techniques to school-related issues has improved.

However, there were additional difficulties throughout the implementation stage. Deeper examination of each module was impeded by the short training period, and several participants found it difficult to use the self-reflection techniques that are a part of Appreciative Inquiry. In order to guarantee the implementation's longevity, a few participants also mentioned the necessity of continuing assistance after training. Participant and facilitator feedback from focus group discussions produced insightful information. In addition to making changes to the Appreciative Inquiry materials to accurately represent the difficulties experienced by school principals, participants recommended adding more sessions to help them gain a deeper understanding of leadership principles and practices. In order to give school administrators continuing support, it was also suggested that the training approach be combined with mentorship initiatives.

Overall, school principals' managerial skills have improved as a result of the application of the ADDIE training model, which is founded on grit and appreciative inquiry. However, in order to maximize the training experience, a few things need to be improved. Suggestions include extending the training period to allow for a more thorough discussion of the materials, creating a mentoring system to assist in putting training results into practice, contextualizing case studies and examples to represent actual school circumstances, and carrying out long-term assessments to gauge the training's effect on principal performance, as indicated in Table 7 below.

**Table 7. Training Results**

Implementation Stage	Number of Participants	Training Methods	Observation Results
Limited Trial	10 Principals	Discussion, Simulation, Reflection	Responsive, enthusiastic, requires revision on specific modules
Field Testing	30 Principals	Discussion, Case Study, Mentoring	High participation, increased understanding, takes longer for reflection

## Evaluation Stage

Two main strategies were used in the Evaluation Stage: evaluating participant satisfaction with the training experience and assessing the model's efficacy using the N-Gain Score.

Pre-test and post-test findings of the principals' managerial competencies were compared as part of the effectiveness evaluation. With an average N-Gain Score of 0.73, which is classified as high, calculations using the N-Gain Score method in Table 8 showed a considerable improvement in participants' abilities after the training. This result emphasizes how well the training approach works to improve school principals' managerial abilities.

**Table 8. N-Gain Score Results Table and Statistical Test**

Implementation Stage	Pre-Test (Mean)	Post-Test (Mean)	N-Gain Score	Normality Test (p)	t-Test (p)
Limited Trial	48.67	87.11	0.74	0.346	0.001
Field Testing	49.20	85.33	0.71	0.083	0.001

The pre-test and post-test results were subjected to t-tests and normality tests in order to confirm the data. The t-test was able to evaluate significant differences between pre- and post-training since the normality test verified that the data had a normal distribution. The findings of the t-test showed a statistically significant difference between the managerial abilities of principals before and after the training, with a significance value (p-value) of 0.001 ( $p < 0.05$ ). A questionnaire that addressed topics such participant involvement, method efficacy, material relevancy, and the training's influence on school leadership practices was used to gauge participant satisfaction with the program. According to the examination of the satisfaction data, which is shown in Table 9, 15% of participants indicated pleasure with the training, while 85% of participants said they were extremely satisfied. Interestingly, none of the volunteers expressed discontent. The interactive, experience-based training techniques and resources designed specifically for school administrators dealing with leadership issues received the highest satisfaction ratings.

**Table 9. Participant Satisfaction Results for Training**

Satisfaction Aspect	Very satisfied (%)	Satisfied (%)	Dissatisfied (%)
Material Relevance	88	12	0

Method Effectiveness	85	15	0
Participant Engagement	86	14	0
Impact on Leadership Practice	83	17	0
Average	85.5	14.5	0

Notwithstanding the encouraging comments, participants offered ideas for additional development. Others asked for more flexible training periods to fit in with school administrators' hectic schedules, while others suggested adding mentoring sessions after training to maximize the application of the materials. The evaluation stage confirms that the ADDIE training model based on Appreciative Inquiry and Grit is highly effective in enhancing the managerial competencies of school principals. The high N-Gain Score and excellent participant satisfaction levels indicate the model's viability for broader application. Future development recommendations include adjusting training schedules, incorporating mentoring sessions, and conducting long-term evaluations to assess the model's impact on principal performance over time.

## DISCUSSION

This study introduces the ADDIE Training Management Model, which combines the ideas of grit and appreciative inquiry (AI) to improve school administrators' managerial skills. With an amazing average N-Gain Score of 0.73, which places the improvement in the top range, the study's findings highlight the model's efficacy in developing school principals' leadership abilities. The training model's integration of Appreciative Inquiry promotes a strengths-based approach, motivating school administrators to recognize and enhance their current competencies [30], [31]. In addition to increasing involvement, this constructive framework creates a cooperative atmosphere where principals can exchange experiences and gain knowledge from one another [32]. Participants are empowered to develop a more resilient and adaptable leadership style by concentrating on what aspects of their leadership practices are effective [33], [34], and [35].

Furthermore, incorporating grit into the training program is essential for fostering tenacity and enthusiasm for long-term objectives [36]. For school principals, who frequently deal with difficult situations in their positions, this quality is very important (Kaya & Yüksel, 2022; Malureanu et al., 2021). Through the development of a mindset that prioritizes resilience and ongoing progress, the training model gives individuals the skills they need to successfully navigate these obstacles. The high N-Gain Score shows that participants' leadership practices underwent a substantial change in addition to gaining new information and abilities. This result implies that the ADDIE Training Management Model is a useful framework that can be successfully applied in actual educational settings rather than only being a theoretical concept. A better comprehension of leadership principles and their practical implementation is facilitated by the model's design, which incorporates case studies, interactive learning experiences, and reflective exercises.

Additionally, the model's compatibility with the real demands of school administrators is highlighted by the good feedback received from participants regarding the training's effectiveness and relevance [39], [40]. For professional development programs to have an impact and last, this alignment is essential [40], [41], and [42]. The results of the study support the ADDIE Training Management Model's wider use since it provides a methodical but adaptable way to improve school administrators' managerial skills. A major breakthrough in the field of education management has been made with the creation and validation of the ADDIE Training Management Model, which is based on Grit and Appreciative Inquiry [43]. The model makes a strong case for adoption in a variety of educational situations due to its proven efficacy in enhancing school principals' leadership abilities. The long-term effects of this approach on student outcomes and school performance, as well as its flexibility in various learning contexts and leadership issues, should all be investigated in future studies.

## CONCLUSION

This study has effectively created a thorough training management model that combines the ADDIE method with the ideas of grit and appreciative inquiry (AI) to improve school administrators' managerial skills. Based on the study's empirical data, a considerable average N-Gain Score of 0.73 indicates that this model is helpful in greatly enhancing school principals' leadership abilities. This result demonstrates how the model can support resilience and a strengths-based approach to leadership in education. This study has significant management and leadership development ramifications. By incorporating AI and Grit into the ADDIE framework, the approach fosters a mindset focused on adaptation and ongoing growth in addition to meeting the urgent training needs of school leaders. This

strategy promotes school administrators to play to their strengths and persevere in the face of difficulties, which eventually leads to better educational results and more efficient school administration. Additionally, the model is a useful tool for educational institutions looking to put in place structured training programs that are effective and useful.

There are other avenues for further research and application, such as the need for longitudinal studies to assess the Training Management Model's long-term impacts on school principals' managing abilities and the overall effectiveness of their organizations. Future studies could also examine how well this model adapts to various cultural and educational situations in order to ascertain its universal applicability. Lastly, adding mentorship and feedback mechanisms to the training process could improve the model's efficacy even more and guarantee that school administrators get continuous assistance as they put the training's lessons into practice. By following these recommendations, the educational community may keep improving and building on the groundwork laid out in this study.

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