The ACDEA and STAD techniques in the development of grade 9 student learning achievement on literature value analysis

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Abstract

The primary aims of the study were twofold: firstly, to examine the impact of employing the ACDEA (Assessment, Collaboration, Discussion, Exploration, and Analysis) and STAD (Student Teams Achievement Divisions) techniques on the academic performance of ninth-grade students in the analysis of literary values; and secondly, to evaluate the level of satisfaction among students regarding these pedagogical approaches. For this research, 26 grade 9 students from a public school in Thailand were selected through cluster random sampling. To collect data and measure outcomes, an integrated ACDEA and STAD learning management plan was employed, along with a literature evaluation achievement test and a satisfaction questionnaire. The gathered data underwent analysis using various statistical measures, including percentage, mean score, standard deviation, t-test, and effectiveness index, with the effectiveness criterion set at 80/80. The results of the study revealed that the combination of ACDEA and STAD techniques served as an effective learning management plan for the literature value analysis class. Students demonstrated notable improvements in their learning achievements as a result of the collaborative learning approach. Additionally, the students reported high levels of satisfaction with the learning experiences provided by this instructional strategy. The study's contributions to the field of education are significant, as they provide empirical evidence supporting the implementation of ACDEA in language classrooms. Moreover, the collaborative learning model employed in this research holds potential implications for other classes with similar learner characteristics, thereby offering a valuable and practical pedagogical approach.

Keywords: ACDEA, Language education, Literature analysis, Literature education, STAD.

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Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
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1. Introduction

Literature study is an essential component of a well-rounded education, as it helps students develop a variety of lifelong skills and perspectives [1]. In the study of literature, learners could develop language skills such as vocabulary, grammar, writing, etc. as they read and analyze text [2]. Moreover, reading about characters and their circumstances promotes empathy and cultural awareness, as well as strengthening learners' experiences and world knowledge [3]. In addition, studying literature allows learners to participate in critical analysis, comprehend themes, and understand other views, all of which contribute to an improvement in thinking processes [4]. Therefore, literature studies have become a crucial part of language curricula from the past to the present.

To gain benefits from literature studies, learners need to be able to comprehend the expressions presented in the complex use of language generally found in literature, poetry, and prose [5]. Furthermore, an understanding and appreciation of literature have a multitude of benefits for students. Through literary analysis, students gain insights into the complexities of plot, character development, and other narrative elements [6]. They learn to appreciate the aesthetic qualities of works and understand the impact of language, style, and tone. The inclusion of literature studies in their curriculum facilitates the complete development of students, encompassing both their academic and personal growth. By engaging with literary texts, students acquire essential skills and gain valuable perspectives that are vital to achieving success in their future pursuits. Consequently, this educational approach contributes to the cultivation of well-rounded people [7].

The principles of analyzing literature values rely on enabling learners to interpret meaning, analyze the elements of literature, compare literature works, and make connections between literature and other contents (e.g., historical events) [8]. Particularly, students should be able to interpret themes and symbols hidden in the authors' languages. They should also identify and analyze key elements of a text, such as plots, character development, settings, and the author's point of view. In addition, it should be beneficial for the development of learners' world knowledge if they can make connections between the literature they read and other works of literature, historical events, and cultural references [9]. These demands may place a load on both the teacher's and the student's ability to handle the language classroom, making it challenging for them to effectively study literature.

In the context of language education in Thailand, the literature study is included in the core curriculum for basic education at the beginning of middle school education [10]. At the end of grade 9, students are expected to deeply understand the famous contemporary literature in which they are interested. However, several studies indicate flaws in the context as learners fail to analyze the value of literature [11, 12]. It can be due to several factors, such as Thai people's reading behaviors, learners' thinking skills, and the class environment. In detail, many Thai people may not have strong reading backgrounds or the reading habits needed for literature studies [13]. They may struggle to engage with texts, understand complicated themes and symbols, and enjoy literature's aesthetics. Moreover, some students lack the capacity for analytical thinking, an important qualification for literary interpretation [14]. This may hinder their comprehension and enjoyment of the texts they read. Finally, Thai classrooms can make literature studies challenging. For instance, rote learning and memorizing might hinder students' literary analysis and critical thinking. Students may feel forced to conform to cultural standards and be less willing to offer their opinions and perspectives, limiting debate and collaboration.

Therefore, presenting a solution for problems in literature value analysis requires an instructional method that could improve students' thinking skills and provide active and collaborative learning. In the current study, the ACDEA technique is presented as it has the potential to develop learners' analytical thinking by putting them in problem-solving processes while analyzing the value of literature. The ACDEA in the technique stands for Analysis, Condition, Data, Eureka, and Apply [15]. The ACDEA framework is an instructional approach that guides students through a systematic process of analyzing and understanding texts. Each letter in ACDEA represents a step in the process:

Analysis: This step involves breaking down the text into its various elements, such as characters, plot, themes, and literary devices. Students critically examine the components of the text to gain a deeper understanding.

Condition: In this step, students evaluate the contextual factors that influence the text, including the historical, social, and cultural background. Understanding the conditions surrounding the text helps students interpret its meaning more accurately.

Data: Students gather evidence from the text to support their analysis. This includes selecting relevant quotes, examples, and passages that support their interpretations and arguments.

Eureka: The "Eureka" step involves students making connections, drawing insights, and having "aha" moments based on their analysis and the data they have collected. This step encourages critical thinking and the synthesis of information.

Apply: Finally, in the "Apply" step, students apply their understanding and insights gained from the previous steps to different contexts. This could involve making connections to other texts, real-world situations, or personal experiences. The framework of the method is depicted in the diagram below.
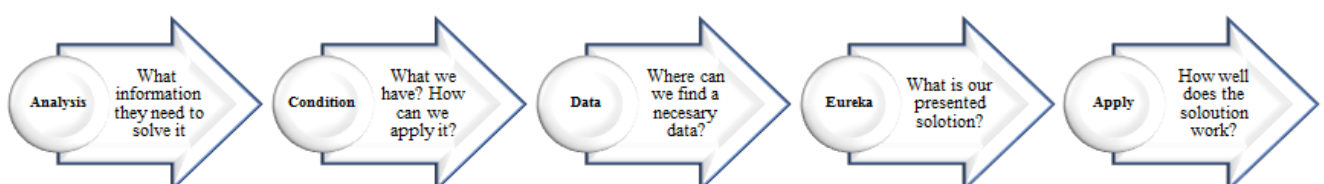

Figure 1.
The ACDEA technique.

Figure 1 illustrates the step-by-step process of the ACDEA technique. This pedagogical method aims to facilitate active participation, foster critical analysis, and encourage collaborative interaction within the context of language learning environment. The ACDEA method offers learners a structured framework for examining and analyzing a piece of literature, which can help them enhance their skills in analyzing the worth of literature. The method walks students through the process of analyzing and comprehending a text in stages, thereby assisting them in the development of stronger critical thinking and analysis skills. This is accomplished by breaking the process down into five stages and guiding students through each stage.

The ACDEA technique holds promise for developing literature analysis skills due to its systematic and comprehensive approach to text examination. By breaking down the analysis process into distinct steps, students are guided through a structured framework that promotes a deeper understanding of literary works.

Firstly, the Analysis step encourages students to dissect the text, focusing on its various elements such as characters, plot, themes, and literary devices. This process trains students to pay attention to the nuances of the text, identifying key elements that contribute to its overall meaning and impact. By conducting a thorough analysis, students develop the ability to extract underlying messages and themes embedded within the literature.

The Condition step is equally crucial, as it prompts students to consider the contextual factors surrounding the text. By exploring the historical, social, and cultural background, students gain insights into the influences and motivations that shaped the literary work. This contextual understanding helps students interpret the text more accurately, recognizing the underlying meanings and connections to broader societal issues.

The Data step emphasizes the importance of gathering evidence from the text to support analysis and interpretations. Students learn to select and analyze relevant quotes, examples, and passages that provide evidence for their arguments. This process fosters critical thinking skills as students learn to evaluate the significance and reliability of the textual evidence they utilize in their analysis.

The Eureka step plays a crucial role as a transformative moment in which students establish correlations, derive profound understandings, and experience epiphanies through their rigorous examination and extensive gathering of data. It encourages students to synthesize information, identify patterns, and develop unique interpretations. This step cultivates higher-order thinking skills, enabling students to move beyond surface-level analysis and delve into the deeper layers of the literature.

Finally, the Apply step encourages students to apply their understanding and insights gained from the previous steps to different contexts. This transfer of knowledge helps students recognize the broader implications of the text, allowing them to make connections to other literary works, real-world situations, or personal experiences. By applying their knowledge, students develop a more comprehensive understanding of literature as a whole and refine their analytical skills.

Moreover, applying a collaborative technique could improve the class atmosphere, making it more active and open for students to share their ideas after reading literature. The STAD (Student Teams-Achievement Divisions) was presented to promote active and cooperative learning among students by having them work in small, heterogeneous teams to achieve a common goal [16]. Students in STAD classes work in teams to solve problems and complete homework. The teacher guides and supports teams but lets them work independently [17]. The teacher then evaluates each team's progress and comprehension in several ways. STAD promotes active learning, critical thinking, problem-solving, and teamwork. It helps students practice and apply their language abilities in a supportive, collaborative environment, making it particularly successful in language and literary classes [18].

A literature value analysis class could benefit from using the STAD technique because it encourages active involvement, fosters critical thinking, encourages opinions, improves language skills, and helps to create a supportive environment. This can result in a more engaging and impactful learning experience for students, enabling them to enhance their understanding of literature and increase their appreciation for the texts they are reading. This can have a positive effect on their overall educational development.

Moreover, by integrating the STAD technique with the ACDEA technique, an effective approach emerges for developing literature analysis skills. The collaborative nature of STAD encourages students to work together in teams, fostering peer support, diverse perspectives, and a cooperative learning environment. This collaborative environment enhances the structured and systematic ACDEA process, enabling students to actively participate in thorough analysis of literary texts. Through team interactions, students can share ideas, challenge assumptions, provide constructive feedback, and collectively build a more comprehensive understanding of the literature. This combination of STAD and ACDEA creates a powerful synergy, enabling students to enhance their critical thinking, analytical prowess, and overall literature analysis skills.

Previous studies seem to support the use of both techniques in language classrooms [15, 19-24]. However, a limited number of studies have been conducted on the ACDEA technique. To our knowledge, only Sangkaew and Buasomboon [15] were found. The authors employed the technique to teach critical reading skills and found that students both develop language skills (reading) and thinking skills (critical thinking) after implementing the technique in a language class of third-year university students. In contrast, the STAD technique was found to positively affect learners' reading comprehension [19, 20, 24], speaking ability [22], listening comprehension [21], and learning achievement [23]. Taking into account previous studies, it is evident that scholars stress the importance of incorporating supplementary techniques to augment the efficacy of ACDEA and STAD methods. Consequently, the present study was undertaken to address the research gaps and explore the potential of ACDEA and STAD techniques in enhancing language achievement in the context of literature value analysis. The purposes of the study were 1)to investigate the effects of the ACDEA and STAD

techniques on grade 9 students' learning achievements in literature value analysis and 2) to study students' satisfaction with the ACDEA and STAD techniques as instructional methods for learning and analyzing literature value.

2. Methods

2.1. Participants
26 grade 9 students in a public school in Thailand were selected using cluster random sampling. They took a language course with the ability to analyze literature value as a learning outcome. The participants passed through a basic education path and never had experience abroad. They were treated with caution due to ethical issues for human subjects.

2.2. Instruments

2.2.1. The Integrated ACDEA and STAD Learning Management Plan
The learning management plan was designed using ACDEA and STAD techniques. Therefore, learning activities in each class emphasized problem-solving processes and teamwork among learners. The summary of the learning activities can be found below.

Table 1.
Learning activities.

ACDEA technique	STAD technique
Analysis: Students practiced close reading and identifying key elements of the text, such as the author's purpose, the main characters and themes, and the setting.	• Groups of 4-6 students were formed.
Condition: Students considered the context in which the text was written and evaluated the author's intent.	• Each group was assigned to analyze a specific character, write a review of the text, and compare and contrast two themes in the text.
Data: Students gathered evidence from the text to support their understanding of the author's message.	• Teachers emphasized teamwork, active listening, and mutual support to complete tasks. The ACDEA technique was recommended.
Eureka: Students synthesized the information they gathered and formed their opinions about the text.	• Teachers, as needed, guided teams but let them work independently and encouraged them to think critically and creatively.
Apply: Students applied their understanding of the text to real-world situations.	• The team presented their findings to the class once they finish.
	• The team's effort, presentation, cooperation, and involvement were assessed.

Table 1 exhibits how the ACDEA technique was integrated with the STAD technique to teach literature analysis skills. In detail, four sub-lesson plans are included in the management plan, and it takes 8 hours to implement the plans. The learning management plan was evaluated at a very high level of appropriation ($\bar{x}$ = 4.96, S.D. = 0.02) by scholars and professional teachers (n=3). To examine the effectiveness of the plan, the participants were evaluated in each sub-lesson plan and at the end of the plan.

2.2.2. Learning Achievement Test of Literature Evaluation
The test was designed as a four-multiple choice. It consists of 30 items with a content validity of 0.67-1.0 tested by the index of item objective congruence assigning 3 experts. The test difficulty was developed with a difficulty of 0.1-0.8, discrimination of 0.15-0.95, and reliability of 0.778.

2.2.3. Questionnaire
The questionnaire was designed on a 5-point Likert-scale with 10 statements regarding their experiences learning to analyze literature with the integrated ACDEA and STAD learning management. The content validity of the items was 0.67-1.00 tested by the index of item objective congruence assigning 3 experts. The questionnaire discrimination (r=0.44-0.77) and reliability (0.84) were at an acceptable level.

2.3. Data Analysis
The study was conducted in a pre-post-test design. Only one group of participants was assigned. Their knowledge of literature value analysis before, during, and after the implementation of the learning management plan was assessed to examine the effects of ACDEA and STAD techniques. The participants' satisfaction was also studied. The data were analyzed by percentage, mean score, standard deviation, t-test, and effectiveness index with a determining criterion of 80/80.

Table 2.
Effectiveness index of the ACDEA and STAD techniques.

Effectiveness	Maximum point	$\bar{x}$	S.D.	Percentage
Process (E_1)	110	89.03	2.17	80.63
Produce (E_2)	30	24.31	2.35	81.03
Effectiveness index **(E1/E2)** 80.63 / 81.03				

3. Results

The effectiveness index of the learning management plan was examined by comparing the percentage of knowledge of the participants during and after learning in the plan as the process effectiveness and the product effectiveness of the plan, respectively. Table 2 presents the participant's performances during and after the implementation of learning management. The result of the study indicates that the participant's average score while learning was 89.03 out of 110 (E_1=80.63) while the participants' average score after learning the plan was 24.31 out of 30 (E_2= 81.03). Therefore, the effectiveness index of the product was 80.63/81.03 reaching the determining criteria of 80/80.

Table 3.
The student learning achievement before and after the learning management plan.

Learning achievement scores	N	$\bar{x}$	S.D.	T	Sig.
Pre-test	26	10.53	1.84	22.91	0.00
Post-test	26	24.34	2.35		

It is also shown that the participant's learning achievement after the implementation of the learning management plan was higher than in the pre-test. Table 3 presents the participants' learning achievements before and after the use of the learning management plan. In detail, a paired samples t-test indicates that there was a significant difference between the average score in the pre-test ($\bar{x}$ = 10.53, S.D. = 1.84) and the post-test ($\bar{x}$ = 24.34, S.D = 2.35), t=22.91, p =0.00. Therefore, it could be interpreted that the learning management plan helped the participant improve their abilities to analyze literature value.

Table 4.
The participant satisfaction with the ACDEA and STAD techniques.

Statement	$\bar{x}$	S.D	Degree of agreement
The learning management plan provided me with the knowledge I wanted.	4.58	0.67	Strongly agreed
I comprehended the class content.	4.32	0.89	Agreed
I could apply what I learned in class to my daily life.	4.71	0.49	Strongly agreed
The learning activities were interesting.	4.69	0.54	Strongly agreed
Teachers transferred knowledge in class effectively.	4.74	0.68	Strongly agreed
I enjoyed class activities and the teachers' teaching techniques.	4.32	0.44	Agreed
Learning activities guided me to understand class content.	4.68	0.78	Strongly agreed
I wish teachers would use the same teaching method in other subjects.	4.73	0.65	Strongly agreed
I felt pleasure in participating in the learning activities.	4.63	0.47	Strongly agreed
Learning activities were consistent with class objectives.	4.47	0.45	Agreed
Average	4.55	0.61	Strongly agreed

Table 4 shows participant satisfaction with the ACDEA and STAD techniques. The study's results demonstrated that the participants' average score in response to the positive statements regarding their learning experience while participating in the learning management plan was notably high ($\bar{x}$ = 4.55, S.D = 0.61). This indicates a strong agreement among the participants regarding the positive aspects of their learning experience. Digging deeper into the participants' feedback, it was evident that the students in the literature value analysis class expressed satisfaction with their overall learning experience. They reported a solid understanding of the class content and its practical application in their daily lives. This finding indicates that the participants demonstrated the ability to apply the knowledge and abilities acquired from educational activities to practical scenarios, hence, highlighting the significance and practicality of the instructional approach.

The participants also found the learning activities to be interesting, indicating that the instructional methods employed in the learning management plan were engaging and captivating. The participants expressed a sense of effectiveness in their learning outcomes, demonstrating the effectiveness of the teaching methods used. This suggests that the instructional strategies employed successfully facilitated the participants' comprehension and mastery of the literature analysis skills targeted in the class objectives. Furthermore, the participants reported feeling pleasure in participating in the learning activities. This suggests that the learning management plan provided an enjoyable and satisfying learning experience for the participants. The positive emotional experience of the participants can contribute to increased motivation, engagement, and active participation in the learning process.

4. Discussion

The results of the study indicate that integrating the ACDEA and STAD techniques in a learning management plan proved to be effective in developing grade 9 students both during and after the implementation of the plan. The integration of these techniques led to improved learning achievement in literature value analysis. Furthermore, the participants' satisfaction with their learning experiences highlights the positive impact of these techniques on the overall classroom learning environment. These findings align with previous studies that have also recognized the benefits of ACDEA and STAD techniques in language classrooms (e.g.,[15, 19-24]). This could be explained by several issues regarding the potential of the two principles.

Firstly, the ACDEA technique provided a structured framework for students to systematically analyze and understand literary texts. By breaking down the analysis process into distinct steps, such as Analysis, Condition, Data, Eureka, and Apply, students were guided through a comprehensive approach that encouraged critical thinking and deep engagement with the literature. This structured approach allowed students to approach literary analysis in a methodical and organized manner, enabling them to explore the nuances of the text and develop a more thorough understanding of its elements.

Secondly, the collaborative nature of the STAD technique played a crucial role in enhancing the effectiveness of the learning management plan. By dividing students into teams, the STAD approach promoted peer interaction, knowledge sharing, and collective problem-solving. This collaborative environment fostered a supportive and engaging atmosphere where students could discuss and analyze literature together. Through collaborative discussions, students were exposed to diverse perspectives and insights, challenging their own assumptions and broadening their understanding of the text. The opportunity to collaborate with peers not only enriched the learning experience but also allowed for constructive feedback and mutual support, further enhancing students' literature analysis skills.

Furthermore, the integration of the ACDEA and STAD techniques facilitated active student engagement throughout the learning process. By involving students in the various stages of analysis, such as breaking down the text, gathering evidence, and forming their own interpretations, both techniques promoted student ownership of the learning experience. This active engagement empowered students to take responsibility for their learning, fostering a sense of autonomy and intrinsic motivation. As a result, students became more invested in the literature analysis tasks and exhibited a higher level of enthusiasm, leading to improved learning outcomes.

Moreover, this study adds to the existing evidence supporting the efficacy of the ACDEA technique in a language classroom. The structured approach of ACDEA guided participants through the steps of analyzing and understanding a text, fostering critical thinking and analysis skills. By breaking down the text, evaluating the author's intent, gathering evidence, synthesizing information, and forming their own opinions, participants developed a deeper understanding and improved their ability to analyze texts in a more informed and nuanced way. As a result, their literature analysis abilities showed improvement, as demonstrated by the study's findings.

Similarly, the STAD technique played a significant role in this study by allowing students to engage in the ACDEA process collaboratively with their teammates. This collaborative approach facilitated idea exchange, mutual assistance, and teamwork during the analysis process. Consequently, students' literary analysis skills were enhanced, as the teamwork enabled a more thorough examination of the text. The collaborative environment enabled students to draw on diverse viewpoints, challenge each other's ideas, and build upon each other's strengths, leading to a deeper comprehension of the material and their own analytical abilities.

5. Conclusion

In conclusion, this study aimed to evaluate the impact of the ACDEA and STAD techniques on grade 9 students' learning achievements in literature value analysis and their satisfaction with these techniques as instructional methods. The results showed that the integration of the two techniques resulted in an effective learning management plan and improved students' ability to analyze the value of literature. Furthermore, the students expressed satisfaction with the learning experiences they gained through the plan. These findings contribute to the field by providing evidence to support the use of the ACDEA in language classrooms and highlight the potential for collaborative learning instruction in other classes with similar learner characteristics.

The findings of this study hold significant practical implications for language teachers and language education as a whole. The successful integration of the ACDEA and STAD techniques in this study serves as evidence of their effectiveness in enhancing students' learning experiences and achievements, specifically in the domain of literature analysis. These positive outcomes can serve as an impetus for language teachers to consider adopting and integrating these techniques into their own classroom practices.

Regarding recommendations for future research, this study lays the groundwork for future research to build upon. Future research may, for instance, investigate the effect of the ACDEA and STAD approaches on other elements of language acquisition, such as writing or speaking. In addition, future research might explore the efficacy of the ACDEA and STAD approaches in various educational settings, such as in different nations or with students of various ages.

It is important to acknowledge the limitations of this study, particularly in terms of the research methodology employed. This study solely relied on a quantitative research method, which may have certain limitations in capturing the full complexity and nuances of the students' learning experiences and the effectiveness of the integrated ACDEA and STAD techniques. By solely focusing on quantitative data, some qualitative aspects of the students' perceptions, attitudes, and individual experiences may have been overlooked. Incorporating qualitative methods, such as interviews or open-ended survey questions, could have provided more in-depth insights into the students' perspectives and enriched the overall understanding of the impact of the integrated techniques. Future research could consider employing a mixed-methods

approach to gain a more comprehensive understanding of the benefits and limitations of integrating ACDEA and STAD techniques in literature analysis instruction.

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