

## Promoting EFL junior secondary students' critical thinking skills through analogical reasoning in narrative text

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### ABSTRACT

The current rate of advancement in information and technology presents new challenges for EFL teachers at all levels of education. Students are confronted with perplexing data, leaving them feeling disoriented in the digital world and ignoring their awareness of social issues. This problem prompts the teachers to encourage students' critical thinking skills through various strategies that require them to participate in learning. This study describes the implementation of analogical reasoning in a narrative text to promote EFL junior secondary students' critical thinking skills and investigate the levels of students' thinking skills promoted by the teachers through the learning strategy. A classroom action research covering two cycles was employed as a research design. There were three instruments to collect the data: classroom observation, interview with the teachers and students, and document analysis. The collected data were then analyzed and interpreted by referring to the theory of analogical reasoning, narrative text, and promoting critical thinking skills. This study revealed that the teachers applied analogical reasoning in three stages, such as retrieval, mapping, and reflecting integrated with students' schemata. In terms of the students' levels of thinking, this learning strategy had successfully promoted students' thinking skills from applying to creating levels as indicated from the inferences made by the students.

**Keywords:** Analogical reasoning; critical thinking skills; junior high school students; narrative text

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### INTRODUCTION

As the substitute for the Education Unit Level Curriculum (KTSP), the new Curriculum 2013 puts critical thinking as the main agenda to be promoted to Indonesian students in all subjects at formal education. Promoting students' critical thinking skills is commonly defined as a process that allows students to use logical reasoning to determine what is relevant and what is not to solve a problem. It necessitates the ability to think rationally (Cottrell, 2005).

However, the rapid development of information and technology poses new challenges

for teachers at all levels of education. Students are confronted with perplexing data, making them feel lost in the digital world and neglecting their awareness of the social issues (Plowman et al., 2010). It is aggravated by the fact that the majority of parents do not spend enough time with their children (Conelly & Kimmel, 2015), which consequently changes their behavior, personality, and cognition (Fiorini & Keane, 2014; Hsin & Felfe, 2014). As an example, the lack of supervision of children in consuming information through digital devices may affect their critical thinking skills (Golding, 2011). They are accustomed to receiving

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information immediately without having to go through the process of examining and assessing it to discover the facts.

Such a problem certainly leads to the burden of the teachers to introduce learning materials and involve them in the classroom activities requiring students to discuss from multiple perspectives. It will be far more difficult for teachers to expose students to the complexities of social issues encountering school-aged children. In fact, these issues stem from the most recent problems in their lives (living problems) with which they are familiar. Their inability to think critically makes them only become passive learners who cannot optimally contribute through the knowledge they have acquired through formal education.

To address this issue, narrative acts as an alternative strategy for English teachers in promoting students' critical thinking skills. This genre of the text employs more complex and implied language than non-narrative, allowing for more room for different interpretations, explanations, and argumentations Atkinson and Mitchell (2010). Utilizing narrative in EFL contexts may also provide opportunities for language learners to improve their self-awareness and higher-order thinking skills through confrontation with a variety of interpretations, explanations, and arguments (Pashangzadeh et al., 2016). It is further supported by the findings of the study conducted by Setyarini et al. (2018) underlining that storytelling is a part of narrative learning promotes students' higher-order thinking skills since the EFL teacher will be able to invite students to brainstorm, mind-mapping, and role-playing activities. Through storytelling, the teachers employ students' prior knowledge and experience to construct new knowledge (Setyarini et al., 2018).

Another study conducted by Ahmadian and Pashangzadeh (2013), also found similar results emphasizing the positive impact of narrative to promote students' critical thinking skills. Narrative in EFL classroom stipulates significant improvement and enhancement of EFL learners' reading comprehension activity as a consequence of students' cognitive analytical development toward the components of the texts (Ahmadian & Pashangzadeh, 2013). It implies that narrative texts in EFL classrooms provoked students to utilize a different number of thinking skills including analytical skills, problem-solving, creative, and reflective thinking skills.

Nonetheless, the above-mentioned studies' findings have not yet been associated with the context of everyday life in narrative text, which may encourage students to construct new information based on their daily experiences. Hence, analogical reasoning is considered to be a learning strategy that incorporates daily life context into narrative texts to promote students' critical thinking skills. As a

fundamental aspect of human cognition, analogical reasoning enables students to perceive and use relational similarity between two situations or events employing their perceptions toward the daily life contexts (Gentner & Smith, 2012).

Although it may appear to be a complex process, individuals use analogy daily (Gentner & Smith, 2012). Analogical reasoning is also conceptualized as a way that allows students to use a familiar situation to build new knowledge while also involving their critical thinking skills. From the lens of language learning, it provides a linguistic label which is known as a stock and flow system to facilitate remembering the abstraction and applying it to other situations (Gentner & Smith, 2012; Richland & Simms, 2015).

Another advantage of analogical reasoning is that it involves students' prior knowledge in the promotion of critical thinking skills (Vendetti et al., 2015). The majority of EFL teachers generally think that promoting critical thinking skills is a complicated task to do because students are incapable to relate their prior knowledge (Gentner & Smith, 2012; Vendetti et al., 2015). So far, students struggle to construct their critical perceptions because they only remember the facts without going through the process of analysis and evaluation (Simms et al., 2018; Setyarini et al., 2018). Analogical reasoning, therefore, attempts to involve prior knowledge and experience to interpret a situation that someone has just encountered (Vendetti et al., 2015). It also requires in-depth analysis in finding similarities and differences by comparing two objects.

Considering the benefits of narrative text and analogical reasoning in teaching English as a foreign language, this study attempted to answer some research questions: (1) how is analogical reasoning implemented in narrative texts to promote EFL students' critical thinking skills; (2) what are the challenges faced by the teacher in implementing the learning strategy. The results of this study are expected to contribute to the growing body of research focusing on the promotion of students' critical thinking skills, especially in the context of language learning.

## **METHOD**

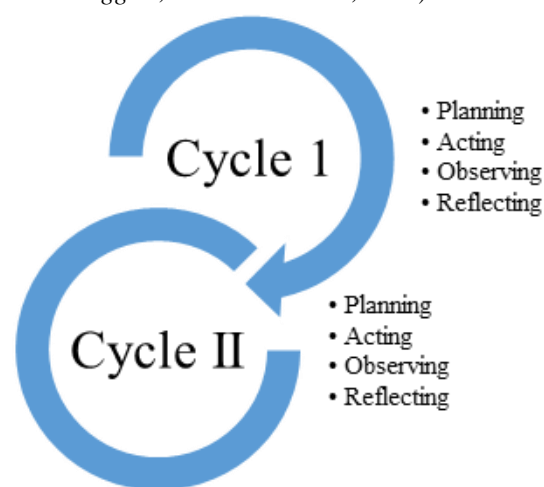
Since this study scrutinizes the promotion of EFL students' critical thinking skills through analogical reasoning in narrative text, classroom action research was applied as the design. This design is highly recommended for teachers to reflect on their classroom practices and improve students' learning outcomes (Mettetal, 2002). In detail, the design of this study can be seen in Figure 1.

Furthermore, action research is the process by which practitioners attempt to scientifically study their problems to guide, correct, and evaluate their

decisions and actions (Glanz, 2014). Regarding the context of this study, it captured the problem of the EFL teachers, which was the lower levels of students' thinking, and attempted to solve the problem by implementing analogical reasoning through narrative text. In detail, this study was done in two cycles, where each cycle covered four phases, namely planning, acting, observing, and reflecting. It followed the idea of Kemmis and McTaggart (1988) as cited in (Maxwell, 2015) claiming that action research is a cyclical process involving four phases from planning to evaluating.

**Figure 1**

*The Cycle of Classroom Action Research (Kemmis & McTaggart, 1988 in Maxwell, 2015)*



In each stage of planning, the research process began with identifying and limiting the topic, gathering related information, reviewing related literature, designing an observation guide, and developing a research plan. Then, in the acting phase, the teachers implemented the strategy of analogical reasoning in narrative text and investigated students' critical thinking skills from their arguments and participation in the classroom. During the observing phase, the teachers carefully observed the students based on the observation guides designed previously. Lastly, in the reflecting phase, the teachers reflected on the learning process and analyze students' works to get insights into the students' critical thinking skills.

In terms of research site and participants, this study was conducted in two public schools in the Northern Bandung district. They were classified as the national standard schools that adapted the curriculum 2013 and intended to promote students' critical thinking skills. So far, these two schools have prioritized text-based learning from a variety of genres at every level of education. The teachers have also had a strong motivation to promote students' critical thinking skills as indicated from their participation in joining some seminars and professional development on critical thinking.

However, in their classroom practices, the teachers only introduced the elements of language and structure from each genre. They assumed that introducing students to the language elements and structure of the text would engage them in critical thinking-based learning activities that lead to problem-solving skills. From the students' profile, this study involved one class of seventh-grade students from each school. They had less than three years of English learning experiences and only learned from formal education without getting additional English courses.

To collect data, three research techniques were employed, namely classroom observation, interview with teachers and students, and document analysis. These techniques were manifested through some research instruments. The observation was done by using an observation guide, audio-video recordings, and a field-notes to capture all single details of learning. It also focused on some aspects of analogical reasoning done by the students toward two domains (the source and the target) from the stories delivered by the teachers. In doing the observation, the teachers captured the information about students' critical thinking skills by following the steps of Analogical Reasoning proposed by Holyoak, (2012), such as paying attention to the relevant information, extracting relationships within and across items, and making the appropriate mapping across domains to generate inferences. Regarding the teachers' behaviors and verbatims, an observation guide was employed focusing on the strategies of implementing analogical reasoning, promoting students' critical thinking skills, and narrative texts.

Furthermore, the interviews were done with the students and the teachers. Interview with the students aimed at excavating more comments, opinions, and statements of the students that indicated their critical thinking skills. Meanwhile, the interview with the teachers aimed to gain their opinions about the challenges in implementing the learning strategy.

The data from the classroom observations and interviews were then supported by document analysis emphasizing the lesson plans made by the teachers, students' written works, and teaching materials that support the promotion of students' critical thinking skills. These documents prod the concrete data about students' critical thinking skills and the implementation of analogical reasoning.

Lastly, the collected data were analyzed and interpreted based on the theory of analogical reasoning, both from the teachers and students' side. Basically, it focused on three stages including retrieval, mapping, and evaluation. Each of them captured students' levels of thinking through their reasoning and teachers' strategy to stimulate the students' critical ideas.

**FINDINGS AND DISCUSSION**

**The implementation of analogical reasoning in narrative text to promote EFL students' critical thinking skills**

Since this study employed classroom action research as the design, the data collection process was done in two cycles. Each cycle covered four phases, namely planning, acting, observing, and evaluating with different activities to implement analogical reasoning in promoting students' critical thinking skills.

The first cycle of this study was commenced by the planning phase allowing the teachers to prepare the lesson through some activities, such as designing a lesson plan, selecting learning materials, and constructing instruments of assessment. Designing lesson plans focused on the construction of learning objectives, learning time allocation, steps of analogical reasoning, and indicators of achievements. Learning objectives formulated by the teachers addressed the cognitive and behavioral domains of the students. Regarding the cognitive domain, the teachers referred to Bloom's taxonomy emphasizing the top-three levels of thinking skills, namely analysis, synthesis, and evaluation. Both of the teachers agreed that these levels would be appropriate in promoting students' critical thinking skills through analogical reasoning as they acclaimed that analogical reasoning in narrative text would enable students to analyze, evaluate, and construct new information.

Moreover, the teachers through their formulated learning objectives expected students to be able to analyze the content of the stories; compare and contrast the events, characters, plots, and settings of the stories to their daily life contexts;

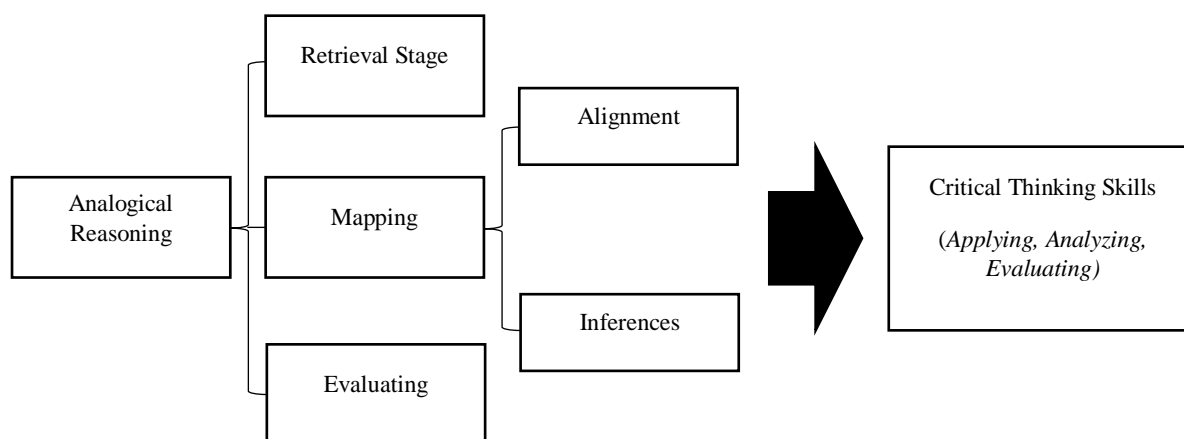
and create a new text based on the results of their evaluation toward the stories and daily life experiences. These learning objectives implied the scaffolding strategy done by the teachers facilitating students to gradually achieve the higher levels of thinking skills (Ahmadian & Pashangzadeh, 2013).

Meanwhile, the behavioral domains allowed the students to actively participate in oral discussions while doing analogical reasoning. The students were also expected to provide critical responses to the stories and arguments presented by their peers. These learning objectives, more like cognitive domain, were derived from Bloom's taxonomy, which engaged students' higher-order thinking skills. It was then deployed in the form of learning attitudes.

Following the formulation of the learning objectives, the teachers proceeded to allot the time necessary to implement analogical reasoning. The results of the document analysis focusing on the lesson plans made by the teachers and the syllabus, the teachers required two meetings per week, each lasting 90 minutes. The teachers acclaimed that the time was allotted considering the steps needed to apply the learning strategy.

Also, the teachers simultaneously determined the stages of analogical reasoning integrated with narrative text. These stages are prepared with strategies for teaching narrative text, target thinking skills, and students' prior knowledge and experience. Generally, analogical reasoning activities covered three main stages, including retrieval, mapping, and evaluating stages. All of these stages would be implemented in the acting phase through some activities as illustrated in Figure 1.

**Figure 1**  
*Stages of Analogical Reasoning*



To determine whether the activities and targets in each phase were achieved, the next activity undertaken by the teachers was determining the success indicators. These success indicators were based on Gentner and Smith's (2012) theory of

implementing analogical reasoning, which required students to be capable of creative discovery, problem-solving, categorization, and learning and transfer.

An interview with one of the teachers revealed that the primary goal of promoting critical thinking was allowing the students to solve the problems by involving students' schemata. This is in line with the idea of Vendetti et al. (2015) who mentioned that embedding students' prior knowledge in analogical reasoning enables students to solve some problems that are close to their life context.

Once the teachers had finished designing the lesson plan, the next activity completed during the planning phase was selecting learning materials. The teachers selected some stories based on the topic of narrative text, which was integrated with the learning activity. The stories were selected by considering the students' characteristics and age, the context and background of the students, and the linguistic elements of the stories.

In detail, the teachers selected a story entitled "The City and The Country Mice". It was contextually familiar to the students' life experiences and backgrounds, making it easier for them to grasp the meaning of the story and construct new analogous inferences. By contextualizing to the students' life experience, they will be able to interpret a situation that someone has just encountered (Vendetti et al., 2015). The document analysis results also revealed that the teachers prepared some pictures and videos to assist the students in developing their imaginative thinking to comprehend the stories. The teachers believed that both pictures and stories would arouse their past experiences and connect them to the new information.

The final activity in the planning phase was the creation of assessment instruments. The instruments assessed two aspects, namely students' critical thinking skills and analogical reasoning inferences.

The framework of Suskie (2004) was used to assess students' critical thinking skills in certain categories, such as application, analysis, evaluation, problem solving, decision-making, synthesis, creativity, and metacognition. These categories were then infused to the assessment of analogical reasoning inferences focusing on factual correctness and goal relevance as explained by Gentner and Smith (2012). These assessments, according to the teachers would help them capture the detailed information about the arguments of the students reflecting their critical thinking skills.

When all of the tasks in the planning phase were completed, the teachers moved on to the acting phase to put strategy into action. The teachers divided the strategy into three parts, as shown by the data from the classroom observation, such as retrieval, mapping, and evaluating stages. The teachers believed that retrieval stage aimed at activating students' long-term memory covering their past experiences. Through activating this memory, the students would be ready to accept information from the stories and build inferences that matched with their experiences.

In line with this, the data gained from the classroom observation also revealed that one of the teachers showed some pictures to the students. These pictures delineated two mice that were physically different. One mouse appeared glamorous by wearing luxurious clothing and standing in front of a high building, while another one wore very simple clothing and lived in a rather run-down environment. From this picture, the teacher gave some follow-up questions to the students aiming at generating their long-term memory and connecting them to the new information in the picture as summarized in Table 1.

**Table 1**

*Teacher's Questions and Students' Responses in Retrieval Stage*

<b>Teacher's Questions</b>	<b>Students' Responses</b>
When you look at the pictures, what comes to your mind?	<ul style="list-style-type: none"> <li>• Two different mice</li> <li>• The dirty house of my neighbor</li> <li>• Occupation</li> </ul>
How about their appearance? Why do you think so?	<ul style="list-style-type: none"> <li>• One mouse is poor, while his friend is very rich. I see it from their cloth.</li> <li>• Look at the high building there. It is usually in a big city. Maybe that mouse is work very hard and rich.</li> </ul>
Do you think they will be good friends?	<ul style="list-style-type: none"> <li>• I do not think so because rich person does not want to play with the poor one.</li> <li>• Maybe. I have a very rich friend who is nice to me. He always helps by giving me some foods. I like him.</li> </ul>

The questions presented in the table above served as hints for the teacher's story. By providing markers, the students would be able to contextualize the content of the story because they were able to bring their memories and relate them to similar elements

of the new information received (Gentner & Smith, 2012).

After asking the students some questions, the teacher continued to tell them a story. The data from the classroom showed that the teacher delivered a story by using a variety of strategies,

including showing videos and pictures that have been prepared, pausing the story and asking students to guess the plot of the story, and brainstorming. These activities enabled students to build a bridge between the past experience and new context they found. The teacher started the story by playing a video of *The Country Mouse and The City Mouse*. The video was delivered in English, and the teacher assisted the students in translating the dialogues of the characters. The teacher then paused the show and asked the students to predict the next events after the video was nearly finished. The data from the classroom observation showed that the teacher asked the students some questions that required them to analyze and construct information as their prediction of the next event.

From this result, one of the students predicted the next event in the story based on his personal

experiences. He analogized the country mouse as himself since they both came from the same rural areas. The student thought that going to the city would be just as enjoyable, and he made guesses about the storyline that would be told later.

To catch more responses of the students, the teacher further invited the other students to actively participate through brainstorming. This activity aimed to bring diverse experiences of the students into the classroom context and encourage students to respond critically. Furthermore, the teacher claimed that brainstorming allowed the students to see a story from a variety of perspectives. They were not limited to a single point of view, but rather capture the possibilities that can arise in the story through utterances, gestures, and other multimodal texts. In detail, the brainstorming was done as illustrated in Table 2.

**Table 2**  
*Brainstorming Results Captured from the Classroom Observation*

Teacher's Questions	Student's Answers
If you have to choose one of the characters in the story, which one will you choose?	I will be a country mouse because living in a country will give you peace. You do not need to worry.
Do you think those who live in a country will always feel happy?	Sometimes, we still feel scared to live in a country. There are some unpredictable things compared to living in a city.
What experiences did you get from living in a country or a city?	When I was a child, I lived in a small country. We were running out of foods there. We also felt lonely.
How does it relate to the characters in the story?	The country mouse did not feel lonely. The city mouse did.

Once all the activities in the retrieval stage have been conducted, the teachers then proceeded to the mapping stage as to implement analogical reasoning. At this point, the teacher compared and contrasted two texts, namely the students' experience and the content of the story. The teacher had previously obtained a brief description of the students' experiences related to their predictions and decisions in selecting story characters. During the mapping stage, the teacher investigated the students' experiences in greater depth and mapped them to the context of the story.

According to the teacher, mapping is the main focus of analogical reasoning since it allowed the

students to bring previous experiences and relate them to new information. The teacher believed that mapping would assist the students in identifying similarities and differences in information from the two types of text.

Such a belief was then supported by the findings of the classroom observation, which revealed that the students aligned their experiences from long-term memory with the context of the story in terms of characterization, plot, setting, and speech. Table 3 shows the results of aligning process of the two different sources of information done by the students in the mapping stage.

**Table 3**  
*The Aligning Results from Two Different Sources of Information*

Students' Experiences	Content of the Story	Types of Alignment
Living in a rural area	The country mouse lives in a small and far place	One to one correspondence
Rich people tend to underestimate others	The city mouse shocked when he visited the country mouse.	Systematicity principle
People who live in a village are good at managing food stock	The country mouse had a lot of foods.	Systematicity principle
People in the city do not live happily.	The city mouse was panicked when the cat and the landlord came.	Systematicity principle

The results of the classroom observation imply that the students went through two information alignment procedures, namely one to one correspondence and the systematicity principle. One-to-one correspondence refers to one component that corresponded to another component of the

students' experience as the source of information and story content as the target of new information (Gentner & Smith, 2012). As a result, when aligning the two types of information, the students concentrated on one component without engaging in deeper analysis. The systematical principle, on the

other hand, involved a process of critical analysis and evaluation that required the students to see the relationship between these two types of information in a broader context (Gentner & Smith, 2012; Richland & Simms, 2015). According to the findings of the student interviews, they saw the visual text displayed and then linked it to the experiences of the community in the village. The relationship between the two pieces of information was then critically interpreted using a component similarity analysis, which resulted in an assumption about the habits of villagers who always kept food reserves for long-term supplies.

The alignment results were then developed by the teacher to draw inferences from the target information. The teacher gave several cases related to the story. She accomplished this by presenting a table for the students to complete through open discussion. The results of the classroom observation showed that most of the students were unable to draw inferences from the story and found similarities and differences with their real-life contexts.

The data also implied that the students failed to draw inference from the case being discussed. The conversation between the teacher and the student discussed the friendship between the city and country mice. The teacher expected that the student could consistently stick on the topic about friendship and the strategies to maintain it. Unfortunately, at the end of the conversation, the student drew a new topic by going outside of the context in the conversation.

Lastly, in the reflecting stage, the researchers and the teachers collaboratively reflected on the implementation of analogical reasoning to promote

critical thinking skills of junior secondary students. The researchers evaluated the strategies and steps taken by the teachers during the implementation process, both focusing on verbatim and teacher behavioral actions. Meanwhile, the teachers focused on reflecting on the critical thinking skills that are promoted so that they could identify the level of critical thinking skills of the students after the implementation of analogical reasoning.

In terms of verbatims and behaviors used by the teachers in implementing analogical reasoning, they mostly did not refer to the principles of promoting students' critical thinking skills. For example, the teacher A asked the students to relate their personal experiences to the context of the story. However, instead of encouraging the students to analyze and associate their experiences, the teacher only asked a few questions that recalled their memory.

The verbatims from the students and the teacher conversation implied that the teacher did not ask follow-up questions to explore further students' critical thinking skills. The questions given by the teacher merely emphasized recalling past experiences rather than aligning these experiences to the content and context of the story in order for students to draw conclusions and construct new information.

Consequently, the analysis of the students' thinking skills revealed that they did not achieve the evaluation and creation levels shown in the Bloom's taxonomy. This is supported by some responses of the students to the teachers' questions in analogical reasoning. In detail, Table 4 presents the levels of students' thinking skills promoted in the first cycle of the study.

**Table 4**  
*The Levels of Students' Thinking Skills in the First Cycle*

No	Students' Responses	Levels of Thinking	Reasons
1	I think, the city mouse does not like the country mouse's house because it is very small. He likes the bigger one.	Analyzing	The student found the causal reasons toward certain preferences.
2	The country mouse was not really angry. He was just panicked. That was happened to me when I wanted to sneak a food from a fridge. I was very worried that my mother would find me stealing food.	Analyzing	The student compared her past experience to the event in the story.
3	I think the city mouse is happy to visit his friend because it seems they have not seen each other in a long time.	Understanding	The student estimated the possibilities of the event in the story.

The teacher reflected on the level of students' thinking skills, admitting that the first cycle of this study had not successfully promoted students' critical thinking skills. The teachers believed that the teacher factor had the greatest influence on the levels of students' thinking skills. Both teachers agreed that their questioning strategy did not encourage the students to analyze their experiences and look for commonalities in the narrative text.

Furthermore, regarding the learning objectives, the teachers reported that the implementation of

analogical reasoning focused solely on the cognitive domain by ignoring the behavioral one. The teachers admitted that the cognitive domain was distinct from the behavioral domain, despite the fact that these two were related. The teachers also realized that they had ignored the students' attitudes toward the content of the story and its relationship to their own experiences. The teachers mentioned that analogical reasoning was only concerned with cognitive abilities.

Recognizing that the first cycle of the study had not yet achieved its goals, the researchers and the teachers agreed to proceed the study to the second cycle. The teacher conducted the similar activities as in the previous one. Moreover, they were aware of the weaknesses found in the first cycle and identified them as the primary areas to be improved in the next cycle of the study.

In the planning phase, the teachers came up with another story title to keep the students engaged during the learning activities. The teachers selected a story entitled “The Ant and The Grasshopper”. The teachers assumed that this story had a simple language style and plot, making it easier for students to grasp the meaning of the story. Furthermore, the

context of the plot and characterization in this story was close to the students’ daily lives, allowing them to bring their experiences to draw conclusions as new information.

In the acting phase, the teachers applied analogical reasoning as in the previous cycle by covering three stages, namely retrieval, mapping, and evaluating. These stages included the same activities as in the first cycle focusing on the new content of the story. However, in this second cycle, the teachers used appropriate questioning strategy to appeal students to be more active in mapping their experiences and drawing conclusions. To be more detail, the mapping results in the second cycle can be seen in Table 5.

**Table 5**  
*The Mapping Results in the Second Cycle*

<b>Students’ Experiences</b>	<b>Content of the Story</b>	<b>Types of Alignment</b>
In doing a group project, my friends tend to be more prepared by distributing the jobs to the group members	The ants work collaboratively to collect some foods.	Systematicity principle
My neighbor was very lazy to work so he always borrowed money to us.	The grasshopper did not want to work, so he visited the ants’ house for asking foods.	One to one correspondence
People will work very hard when they have a leader.	The leader of the ants encouraged his friends to work and collect some foods	One to one correspondence

After implementing analogical reasoning and mapping students’ experiences, the teachers asked them to draw inferences from the two sources of information (base and target). The results of the second cycle study revealed that the students’ thinking skills improved from applying to evaluating and creating levels. One of the students evaluated his experiences by judging them from a variety of perspectives, including the benefits and drawbacks of deferring work as it was similar to the content of the story. As a result of his inference, he concluded that delaying work means enjoying a moment for a while rather than wasting time. He believed that enjoying time is not always a bad thing and can have a positive impact. As this second cycle of this study has reached the expected results, the researchers and the teachers stopped the research.

**Teacher’s challenges in implementing analogical reasoning in narrative text**

Despite the benefits of analogical reasoning strategy in narrative text to promote students’ critical thinking skills, the teachers face some challenges dealing with lack of knowledge and experience. In term of insufficient knowledge, the teachers realized that analogical reasoning was a new strategy compared to the previous ones. The teachers believed that analogical reasoning required them to understand the grammar in a deeper way and master rich vocabulary to design open-ended questions. It was in contrast to their previous experiences in teaching where they tended to give “close-questions” with yes or no answers, and “what-, where-, when- questions” with explicit responses.

Regarding their experiences, the teachers admitted that this learning strategy was firstly implemented in their practices. Consequently, they seemed to look for the appropriate classroom interactions, learning materials, and assessment procedures that met the objectives of the learning. The teachers also mentioned that preparing cognitive-based learning activities took more efforts and times compared to the conventional ones. They have to be more precise in designing materials and assessment tools that exactly measured the students’ levels of thinking.

To overcome those challenges, the teachers committed to keep implementing this strategy considering their previous teaching weaknesses. The teachers acclaimed that their resilience brought them to stay motivated in teaching critical thinking with this strategy. To strengthen their believed and knowledge, the teachers joined focused group discussions with their peers and participated in *In-house Training* (IHT) programs particularly related to critical thinking learning strategy.

**CONCLUSION**

Based on the data analysis results, some points can be concluded. First, analogical reasoning strategy provided opportunities for the students to bring their long-term memory into classroom learning contexts. It was done through several stages, namely retrieval, mapping, and evaluating. Each of these stages allowed the students to align the base source of memory to the target source where they could promote their higher levels of cognitive skills



covering three skills (analyzing, evaluating, and creating). In addition, to implement this strategy, the teachers applied several stages from the planning to the evaluating phase aiming at involving them in the process of promoting students' critical thinking skills. The teachers highly believed that analogical reasoning relatively assisted them to give exercises to the students to think critically.

Second, dealing with the students' responses toward the implementation of analogical reasoning, it was found that they gave positive responses as they claimed that they met new insights of learning through giving their analogical inferences by considering their prior knowledge and experiences to support their cognitive thinking. They also claimed that analogical reasoning strategy encouraged them to actively participate in their classroom interaction, particularly regarding their ideas to use this strategy.

In terms of limitations of the study, the researchers found that analogical reasoning needs more times to implement since the students needed to be more exposed how to think critically and construct logical arguments. It was not easy to do by the teachers, so they required longer time to make the students habituated to think critically. Consequently, the future studies are suggested to focus on the synergized classroom interactions that involve higher levels of thinking.

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