



Effectiveness of the Circular Debate Strategy in Enhancing Collective Thinking Skills in Reading Lessons: Transitioning from Individual to Collaborative Thinking

Abdelrahim Fathy Ismail

Department of Curriculum and Instruction, Faculty of Education, King Faisal University, Al Ahsa, Saudi Arabia, afismail@kfu.edu.sa

Abstract: The current study aimed to design a proposed program in reading based on the Circular Debate Strategy to enhance specific aspects of collective thinking skills among middle school students. The study employed an experimental methodology using a one-group pretest-posttest design. The sample consisted of 40 students from the middle school stage. To achieve the study's objectives, several instruments and materials were developed, including a list of collective thinking skills appropriate for middle school students, a teacher's guide, a student book, and a collective thinking skills test. The targeted collective thinking skills were categorized into three main dimensions: group idea generation, cooperative argumentation, and synthesis of diverse perspectives. The findings revealed that the Circular Debate Strategy had a strong positive impact on developing collective thinking among the participating students. This highlights the importance of integrating structured debate strategies into reading programs to promote students' collaborative cognitive abilities. Based on these results, the study presents a set of educational recommendations and suggestions for future research.

Keywords: Circular Debate Strategy, Collective Thinking, Group Idea Generation, Reading Lessons, Reading Activities.

Introduction and Theoretical Framework

Traditional teaching strategies used in reading instruction continue to predominantly address lower-order thinking skills within the cognitive domain of learning, focusing primarily on memorization, understanding, and recall (Senthamarai, 2018). Despite growing educational demands for fostering higher-order thinking skills such as independent, creative, and complex thinking, classroom practices often remain limited to activities that do not go beyond basic cognitive engagement (Friedman et al., 2011). This gap underscores the urgent need for a paradigm shift in reading instruction towards methods that actively cultivate advanced thinking capabilities alongside content knowledge (Munna & Kalam, 2021).

Although reading possesses an intrinsic potential for promoting values and attitudes among learners, its instructional focus in various educational stages tends to favor cognitive objectives over affective development (Nadian & Afifi, 2023). Teachers frequently prioritize activities and assessments that measure factual understanding and comprehension, while largely overlooking strategies that could nurture values or sophisticated thought processes.



Consequently, there is a clear necessity for instructional content that not only develops knowledge but simultaneously reinforces positive values and collective cognitive skills (Ulfiyah et al., 2024).

Reading is widely recognized as a gateway to knowledge acquisition, playing a crucial role in the development of language skills. Beyond linguistic competence, reading serves as an effective channel for the cultivation of values and attitudes among students (Aini, 2023). Educational reading materials, when carefully selected, offer an opportunity to present societal values through diverse means—explicit exposition, storytelling, studying historical role models, or persuasive reasoning and evidence-based discussion. Thus, reading instruction must aim not only to develop cognitive and linguistic skills but also to shape learners' social consciousness and moral outlooks (Brown & Pressley, 2023).

Given the multifaceted benefits of reading, it is incumbent upon educational institutions to leverage reading lessons for the integrated development of knowledge, skills, and values (Iskandar et al., 2021). When well-designed, reading curricula can become powerful tools for teaching students to embody societal values in their daily lives, promoting both personal growth and social responsibility (Wilson, 2016).

Moreover, reading texts provide a particularly fertile ground for fostering fundamental and complex thinking skills. Both reading and thinking are dynamic, regenerative forces that equip learners to navigate the fast-paced transformations and challenges of modern life (Yildirim & Soylemez, 2018). As students engage deeply with reading, they simultaneously build the cognitive resilience necessary to adapt, innovate, and uphold cultural identity amid globalizing influences (Koray & Çetinkılıç, 2020).

In today's rapidly evolving world, characterized by information explosions, technological advancements, and complex societal challenges, fostering students' cognitive growth has become a global educational priority. Educational systems worldwide are increasingly emphasizing the development of thinking skills across all levels of schooling, preparing students not merely to absorb knowledge but to critically engage with it, solve emerging problems, and contribute meaningfully to their communities while preserving their unique cultural identities.

Among the various forms of thinking that can be cultivated through reading content at the middle school level is collective thinking. Collective thinking refers to a pattern of mental processes whereby individuals collaboratively engage in generating, evaluating, and synthesizing ideas, leading to the production of solutions or perspectives that transcend individual contributions. It involves a combination of cooperative reasoning, shared problem-solving, and critical dialogue, requiring individuals to listen to others, integrate diverse viewpoints, and refine their ideas through group interaction (Roldán, 2024).



Collective thinking entails complex mental operations that encourage learners to explore multiple perspectives, engage in respectful argumentation, and co-construct knowledge within a social context. Through collective thinking, students are empowered to move beyond isolated cognitive efforts towards collaborative intellectual achievements, thereby enhancing their critical awareness, empathy, and analytical skills (Armenia & Loia, 2022).

One promising strategy that addresses these needs is the Circular Debate Strategy. This instructional approach emphasizes active student participation, initially encouraging individual reflection and idea generation based on reading topics, followed by structured group discussion and synthesis.

The Circular Debate Strategy is an educational method that enables learners to engage with content actively, first documenting their individual thoughts, and then contributing these ideas to group deliberations. It involves organizing students into small groups of 4-6 members seated in a circular arrangement. The teacher presents a question, task, or discussion topic-either orally, visually, or in written form-and students are given ample time to independently formulate their responses before sharing them sequentially within the group (Kagan, 2009).

Kagan's instructional strategies represent a shift from traditional teacher-centered approaches to student-centered learning practices (Goulart, 2022). These strategies emphasize active student engagement over passive reception, leading to significant improvements in academic achievement, critical thinking development, and social skills enhancement. Among these strategies, the Circular Debate Strategy stands out as a dynamic approach that integrates both active learning and cooperative learning principles (Chophel, 2021). It is recognized as one of the most effective cooperative learning techniques for fostering group idea generation and the collective development of ideas. By ensuring the active participation of all students, the Circular Debate Strategy creates a collaborative environment where students engage deeply with the content, articulate their thoughts, and build upon one another's contributions (Dabell, 2019).

Originally developed by educational psychologist Spencer Kagan, the Circular Debate Strategy is grounded in the principles of active cooperative learning. It fosters an environment where each student has the opportunity to think independently before exposing their ideas to group critique and refinement. The strategy is known under several terms in educational literature, including "Round Robin Strategy," "Rotating Roundtable," and "Circular Table Discussion." (Adigun, 2016).

The value of employing the Circular Debate Strategy lies in its ability to provide students with sufficient time for thoughtful consideration, accommodating individual differences while treating each student's contribution as a valuable resource for group idea generation (Asari et al., 2017). Moreover, it promotes essential collaborative competencies such as active listening, constructive negotiation, self-assessment, and peer evaluation.



The strategy can be implemented in both oral and written formats; however, the current study adopts the written form, wherein students document their ideas before engaging in group discussions (Cox, 2019). This method ensures that all voices are heard equally and that students' individual reflections enrich the collective discourse.

Following the framework of the present research, the Circular Debate Strategy is employed through a structured reading program designed to cultivate collective thinking skills during reading lessons. The program integrates selected reading texts and activities aimed at progressively developing students' capacity for collaborative thought.

In particular, the study focuses on enhancing three pivotal dimensions of collective thinking: Group Idea Generation, which encourages students to independently produce ideas that will later be discussed collaboratively; Cooperative Argumentation, which involves engaging in respectful debates to critically evaluate and refine different viewpoints; and Synthesis of Diverse Perspectives, which enables learners to integrate multiple ideas into cohesive, innovative solutions. These dimensions collectively prepare students to transition from isolated cognitive operations to rich, socially situated intellectual engagement, essential for success in the contemporary world.

Study Questions

- Q1: What are the essential collective thinking skills required for middle school students, particularly in the areas of group idea generation, cooperative argumentation, and synthesis of diverse perspectives?
- Q2: What is the design of the proposed reading program that integrates the Circular Debate Strategy to enhance collective thinking skills among middle school students?
- Q3: What is the effectiveness of the proposed reading program based on the Circular Debate Strategy in developing collective thinking skills among middle school students?

Methodology

This study aimed to investigate the effectiveness of a proposed instructional program in reading, based on the Circular Debate Strategy, in enhancing collective thinking skills among middle school students. To implement the field experiment, a quasi-experimental design was adopted, specifically a one-group pretest-posttest design. This involved measuring participants' performance before and after the intervention to assess the differences attributable to the treatment. The research focused exclusively on a single experimental group of students, without the inclusion of a control group, to directly observe the impact of the program.

Participants

The participants consisted of 40 middle school students, selected through simple random sampling to ensure unbiased representation of the research population. These students formed



the experimental group upon whom the proposed program and measurement tools were applied.

Data Collection and Analysis

Data collection in this study was conducted through the administration of the Collective Thinking Skills Test at two points: before (pre-test) and after (post-test) the implementation of the proposed educational program based on the Circular Debate Strategy. The test measured three primary skill domains: group idea generation, cooperative argumentation, and synthesis of diverse perspectives, each comprising a set of sub-skills validated by a panel of experts.

To ensure the reliability and validity of the data, the test underwent expert review and pilot testing with a group outside the main study sample. Cronbach's alpha coefficient for internal consistency was calculated and yielded an acceptable value ($\alpha = 0.82$), confirming the test's suitability for research purposes.

For the analysis phase, descriptive statistics (means and standard deviations) were first computed to provide an overview of student performance on both pre- and post-assessments. To examine the significance of differences between the two assessments, paired-sample t-tests were conducted. Effectiveness was further evaluated by calculating Black's Modified Gain Ratio, offering a standardized measure of the learning gain attributable to the intervention. All statistical analyses were performed at a significance level of $p \leq 0.01$ to ensure rigorous interpretation of the findings.

Instruments

To achieve the study objectives, the researcher developed the following instruments:

1. Collective Thinking Skills Checklist

A checklist of Collective Thinking Skills appropriate for middle school students was constructed. It focused on three major dimensions:

- Group Idea Generation
- Cooperative Argumentation
- Synthesis of Diverse Perspectives

Each main skill included specific sub-skills, developed based on the literature on collaborative thinking and active learning strategies:

Group Idea Generation:

- Generating diverse initial ideas
- Proposing creative solutions
- Building on peers' contributions
- Encouraging unconventional thinking



- Brainstorming without criticism
- Connecting multiple ideas into broader themes

Cooperative Argumentation:

- Presenting arguments respectfully
- Responding thoughtfully to counterarguments
- Supporting opinions with evidence
- Engaging in constructive disagreement
- Synthesizing different viewpoints during discussions

Synthesis of Diverse Perspectives:

- Identifying commonalities across different ideas
- Integrating multiple viewpoints into a unified understanding
- Reframing issues based on collective input
- Weighing pros and cons of varying arguments
- Creating consensus-based solutions
- Bridging conflicting ideas
- Adapting personal views based on group discussions

The initial version of the checklist was reviewed by nine experts in curriculum and instruction. Sub-skills that achieved an 80% or higher agreement rate among the judges were retained, ensuring strong content validity.

2. The Instructional Program

To design the proposed instructional program in reading, the researcher undertook the following steps:

- Defined the general objective of the program: to enhance collective thinking skills among middle school students through reading lessons.
- Established specific, measurable procedural objectives aligned with the targeted skills.
- Integrated the Collective Thinking Skills Checklist into the program's content through systematic pedagogical processing.
- Developed a preliminary version of the instructional content and associated activities.
- Submitted the program to five specialists in curriculum and instruction for expert review, incorporating their suggestions and modifications.

Finalized the instructional program, which consisted of:

- An introductory theoretical overview
- General and procedural objectives
- A detailed timeline for lesson implementation
- Guidelines for students



- Guidelines for teachers
- Step-by-step procedures for applying the Circular Debate Strategy
- Required learning materials
- Proposed activities and exercises
- Assessment and follow-up methods

The program emphasized active engagement, collaborative interaction, and structured opportunities for developing collective thinking during reading lessons.

3. Collective Thinking Skills Test

The Collective Thinking Skills Test was developed to assess students' acquisition of the targeted skills post-intervention. The following steps were taken:

- Content validity was ensured by presenting the test to five experts specializing in curriculum and instruction.
- Each item in the test was linked to specific procedural sub-skills, allowing for detailed feedback during validation.
- Modifications suggested by the experts were incorporated to refine the test items.
- A pilot study was conducted with a separate group of 19 middle school students from the same school. These students were excluded from the main experimental sample.
- The reliability of the test was calculated using Cronbach's alpha, resulting in a coefficient of 0.82, indicating a high level of internal consistency suitable for experimental application.

Through these carefully designed instruments and methodological procedures, the study aimed to rigorously assess the impact of the Circular Debate Strategy on collective thinking development in reading instruction for middle school students.

Results and Discussion

Results of the Collective Thinking Skills Test

To measure the impact of the instructional program, means, standard deviations, and t-test values were calculated for students' scores on the Collective Thinking Skills Test before and after the program implementation. Table 1 presents the results:

Table (1): Means, Standard Deviations, T-Values, and Adjusted Black's Gain Ratio for Pre- and Post-Application of the Collective Thinking Skills Test

Variable	Measurement	Mean	SD	T-Value	Sig. Level	Direction of Difference	Black's Gain Ratio	Gain Significance



Group Idea Generation	Pre	2.47	1.18	6.38	0.01	Post-measurement	1.27	High
	Post	4.23	0.82					
Cooperative Argumentation	Pre	2.4	0.91	9.87	0.01	Post-measurement	1.3	High
	Post	3.78	1.01					
Synthesis of Diverse Perspectives	Pre	1.67	1.09	2.56	0.01	Post-measurement	1.34	High
	Post	2.63	1.04					
Overall Test	Pre	9.74	2.24	11.47	0.01	Post-measurement	1.36	High
	Post	15.43	1.89					

The results in Table 1 demonstrate statistically significant differences at the 0.01 level in favor of the post-test scores across all variables: group idea generation, cooperative argumentation, and synthesis of diverse perspectives, as well as for the total test score.

To further assess the effectiveness of the program, Black's Adjusted Gain Ratio was calculated. The results showed:

An overall gain ratio of 1.36, indicating a high degree of effectiveness.

High gain ratios were also observed in each subskill individually.

The findings indicate that the instructional program based on the Circular Debate Strategy had a strong and positive impact on developing students' collective thinking skills. Several factors may explain these results:

First, the use of the Circular Debate Strategy served as a powerful catalyst in delivering the proposed program. This strategy encouraged students to engage critically with reading material, reflect deeply on embedded values, and independently evaluate, judge, and adopt those values. Such practices likely contributed to a heightened internalization of ideas and a stronger commitment to newly formed positive attitudes.



Second, the strategy allowed students to be the central agents in the learning process, promoting autonomy, responsibility, and engagement. As an active learning approach, it nurtured both individual autonomy within group dynamics and cooperative learning, where each student had the opportunity to generate unique responses while simultaneously contributing to the collective synthesis of ideas.

Moreover, the carefully selected reading content played a crucial role. Texts were chosen for their richness in values, thought-provoking themes, and their potential to stimulate debate and reflection among students. This ensured that students interacted with materials that were not only challenging but also meaningful and relatable to their lives.

Additionally, the instructional objectives, reading materials, and activities of the program were grounded in authentic examples, real-world applications, and culturally relevant contexts. This relevance likely increased students' motivation and provided them with a sense of ownership over their learning, thus enhancing the development of their collective thinking skills.

The study's results affirm that the integration of the Circular Debate Strategy within a thoughtfully designed reading program is an effective method for fostering middle school students' collective thinking abilities across multiple dimensions.

The notable improvement in students' collective thinking skills suggests that the Circular Debate Strategy successfully shifted students' cognitive processes from isolated, individual thought patterns to dynamic, interdependent group reasoning. Students learned not only to generate their own ideas but also to listen to, critique, and build upon the ideas of their peers—a core element of collaborative thinking.

The strategy provided a structured platform where each student was obligated to participate, present arguments, respond to opposing views, and collaboratively synthesize perspectives. This structure reduced passive participation and ensured that each student's individual thinking contributed to the construction of collective knowledge.

Through the iterative cycles of debate and negotiation, students enhanced their abilities in argumentation, critical evaluation, and perspective-taking—skills crucial for effective collective thinking. Furthermore, the strategy promoted social competencies such as respect for differing opinions, negotiation skills, and the co-construction of knowledge.

The reading materials used in the program served as common intellectual ground for the debates. Students did not merely engage with texts individually; instead, reading became a social process, a springboard for collective exploration, where meanings were jointly constructed through dialogue and debate.

The strategy empowered students by placing them at the heart of the learning process, thereby enhancing their sense of agency. By engaging actively in discussion, they assumed ownership



of their ideas and contributions, which is a vital step in transitioning from passive learners to collaborative thinkers.

The improvements across all subskills (idea generation, cooperative argumentation, and synthesis of diverse perspectives) reflect the natural progression that collective thinking entails: moving from independent ideation to cooperative reasoning to integrated collective synthesis exactly the transition targeted by the Circular Debate Strategy.

Conclusion

This study demonstrated the effectiveness of the Circular Debate Strategy in enhancing collective thinking skills among middle school students during reading lessons. By transitioning students from individual cognitive engagement to collaborative reasoning processes, the strategy fostered significant improvements in group idea generation, cooperative argumentation, and the synthesis of diverse perspectives. The structured yet flexible nature of the debate model provided an authentic learning environment where students actively constructed knowledge together, critically examined various viewpoints, and synthesized collective understandings. These findings underscore the potential of structured collaborative strategies, such as the Circular Debate, in transforming traditional reading instruction into dynamic, socially interactive learning experiences that cultivate higher-order thinking skills essential for academic and real-world success.

Limitations

While the findings offer valuable insights, several limitations must be acknowledged. First, the study employed a one-group pretest-posttest experimental design without a control group, which limits the ability to definitively attribute observed improvements solely to the intervention. Second, the sample was restricted to 40 students from a single middle school, which may constrain the generalizability of the results to other populations or educational contexts. Third, the duration of the program was relatively short, and thus, long-term retention and transfer of collective thinking skills were not assessed. Future research is encouraged to replicate the study with larger, more diverse samples, utilize experimental designs with control groups, and explore the longitudinal effects of the Circular Debate Strategy on students' cognitive and social development.

Acknowledgments

This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia (Proposal Number: KFU251644).



References

- [1] Adigun, F. A. (2016). The Effects of Round Robin Teaching Strategy on Students' Academic Achievement in Senior Secondary School Chemistry in Osun State Nigeria. *Journal of Science Teachers Association of Nigeria*, 51(1), 135-141.
- [2] Asari, S. Ma'rifah, U. Arifani, Y. (2017). The Use of Cooperative Round Robin Discussion Model to Improve Students' Holistic Ability in TEFL Class. *International Education Studies*, 10(2), 139-147.
- [3] Cox, J. (2019). How to Use the Round Robin Discussion Teaching Strategies, Retrieved on 5/8 /2019, on <http://www.teachhub.com/how-use-round-robin-discussion-teaching-strategies>
- [4] Dabell, J. (2019). The Round Robin. Retrieved on 10/8/2019 from: <https://johndabell.com/2019/02/16/the-round-robin/>
- [5] Kagan, S. (2009). *Cooperative Learning*. San Clemente, CA: Kagan Publishing.
- [6] Senthamarai, S. (2018). Interactive teaching strategies. *Journal of Applied and Advanced Research*, 3(1), S36-S38.
- [7] Friedman, A. J., Cosby, R., Boyko, S., Hatton-Bauer, J., & Turnbull, G. (2011). Effective teaching strategies and methods of delivery for patient education: a systematic review and practice guideline recommendations. *Journal of Cancer Education*, 26, 12-21.
- [8] Munna, A. S., & Kalam, M. A. (2021). Teaching and learning process to enhance teaching effectiveness: a literature review. *International Journal of Humanities and Innovation (IJHI)*, 4(1), 1-4.
- [9] Nadian, R., & Afifi, N. (2023). Teachers' Strategies in Teaching Reading Skills During Offline Learning In Post Covid-19 Pandemic Period. *IREELL: Indonesian Review of English Education, Linguistics, and Literature*, 1(1), 1-11.
- [10] Ulfiah, S., Samhudi, S., & Rahman, F. (2024). The Implementation of Rally Coach Strategy in Teaching Reading Comprehension a Quasi Experimental Research. *Journal of English Language and Pedagogy (JELPA)*, 2(1), 13-23.
- [11] Brown, R., & Pressley, M. (2023). Self-regulated reading and getting meaning from text: The transactional strategies instruction model and its ongoing validation. In *Self-regulation of learning and performance* (pp. 155-179). Routledge.
- [12] Aini, N., Apriliani, N. S., & Ningrum, A. S. B. (2023). The Effectiveness of Using Tells Strategy on Students' Reading Comprehension. *English Education: Journal of English Teaching and Research*, 8(2), 133-144.
- [13] Iskandar, N., Jannah, M., & Wicaksono, S. R. (2021). The problem based learning in enhancing students' critical thinking for reading skills in english teaching at vocational school. *IJORER: International Journal of Recent Educational Research*, 2(2), 237-249.
- [14] Wilson, K. (2016). Critical reading, critical thinking: Delicate scaffolding in English for Academic Purposes (EAP). *Thinking skills and creativity*, 22, 256-265.



- [15] Yildirim, S., & Soylemez, Y. (2018). The Effect of Performing Reading Activities with Critical Reading Questions on Critical Thinking and Reading Skills. *Asian Journal of Education and Training*, 4(4), 326-335.
- [16] Koray, Ö., & Çetinkılıç, S. (2020). The use of critical reading in understanding scientific texts on academic performance and problem-solving skills. *Science Education International*, 31(4), 400-409.
- [17] Roldán, A. B. P. (2024). Cátedra ECA: Fomento del Pensamiento Crítico y Colectivo a través de Manifestaciones Culturales y Artísticas: ECA Chair: Fostering Critical and Collective Thinking through Cultural and Artistic Manifestations. *Revista Científica*, 9(31), 275-295.
- [18] Armenia, S., & Loia, F. (2022). Integrating Big Data Analytics, Systems Thinking and Viable Systems Approach Towards a Shift from Individual to Collective Intelligence and Collective Knowledge Systems. *puntOorg International Journal*, 7(1), 62-83.
- [19] Goulart, D. A. (2022). *The Effects of a Kagan Cooperative Learning Structure in Engaging Struggling Elementary and Middle School English Language Arts Students* (Doctoral dissertation, Northcentral University).
- [20] Chophel, Y. (2021). Effect of Kagan cooperative learning structures on learning achievement: An experimental study. *International Journal of Multidisciplinary Research and Explorer*, 1(9), 124-132.