Developing Strategic Learners: Collaborative Reasoning with Strategy Instruction to Scaffold Debate and Support the Writing of Arguments

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In the course of students' growth, oral language plays a significant role in their development as writers, readers, thinkers and learners (Dyson, 1983; Foorman et al., 2015a, b). Engagement in oral discourse not only supports students' growth as they interact and negotiate with others in social contexts, but it also promotes their cognitive development (Anderson et al., 2018; Kim, 2020; Kuhn, 1992; Rogoff, 1995), their expressive vocabulary, their conversational patterns of dialogic interactions, their reading, and their writing (Kim & Graham, 2022; Reznitskaya, et al., 2001; Traga Philippakos & Secora, under review). Collaborative argumentation and engagement in dialogic, argumentative discourse, not only promotes oral language development but also engages students in the construction of argumentative skills that serve learners' ability to clearly make a claim, state their reasons, and provide evidence to support those claims in oral discourse and in writing (Philippakos, 2017; Reznitskaya & Anderson, 2015; Traga Philippakos & MacArthur, 2020).

The purpose of this paper is to describe the process of collaborative reasoning with strategy instruction that can be used with early elementary learners and can become the basis for upper elementary and middle grades' students' engagement in debate. In the first section, the meaning of collaborative reasoning and collaborative argumentation are explained. In the second section, the principles of instruction as those are utilized in the Developing Strategic Learners approach of genre-based strategy instruction are provided (see Philippakos et al., 2015). The manuscript closes with guidelines classroom teachers could use to develop lessons on collaborative argumentation to scaffold students' writing, thinking, and reading.

Collaborative Reasoning

When considering the term reasoning, learners enact a process of rationally reviewing content and examining information to reach a conclusion while they utilize facts. In order to *reason*, a hypothesis is made and tested challenging the truth of the hypothesis and reaching conclusions on its veracity (Kuhn, et al., 2016; Wason & Johnson-Laird, 1972). Thus, reasoning takes the form of arguing (Kuhn, 1992; 1993; 2016), which is by nature dialogic (Bakhtin, 1986) and allows for more than one perspective to surface, be considered, and be evaluated. Because of the multiplicity of perspectives, learners metacognitively examine their own perspective and the perspective of others in order to reach a conclusion, a process that makes reasoning and arguing cognitively and metacognitively challenging practices (Iordanou, 2022).

Collaborative reasoning is dialogic, and the process of argumentation allows the development of oral practices for verbal exchange as well as mental schemata for argumentation. Initially, students' responses and argumentative schemata may include their position and a reason. However, as they interact and engage in dialogic argumentation with their teacher and peers, they expand on that schema to include reasons, evidence, and an acknowledgement of opposing views

that strengthen their reasons and the persuasiveness of their evidence (Reznitskaya & Anderson, 2002).

In collaborative reasoning (Anderson et al., 2001), the process of justifying claims and testing a hypothesis is done through collaboration among conversational partners. Thus, learning is not situated only within the individual but is socially constructed and takes place in the dynamic forum of oral discourse. In a Vygotskian view of learning, arguing in a collective, social setting supports the internalization of ideas and development of cognition for the individual. "The higher functions of child thought first appear in the collective life of children in the form of argumentation and only then develop into reflection for the individual children" (Vygotsky, 1981, p. 157). Individual growth occurs through participation, which Rogoff calls *participatory appropriation* as previous experiences lead to the growth of the individual who appropriately negotiates actions and meaning in a specific setting based on the learning that has occurred through their engagement and participation in previous ones (Rogoff, 1995). In collaborative reasoning, partners actively engage in meaning making and problem-solving practices and learn through collaborative exchanges (Cohen, 1994; Moshman & Geil, 1998).

Learners are active by initiating questions and problematizing on topics, expanding their questions instead of being the recipients of questions that they answer (Clark et al., 2003). Teachers are not the only ones to initiate questions, in contrast with interactions in traditional settings in which discourse tends to follow the pattern of Teacher Initiation-Student Response-Teacher Evaluation or Teacher Confirmation (IRE or IRC) (Cazden, 2001). In this traditional format, a student response is evaluated for its accuracy and correctness, and the teacher proceeds with a different question that addresses a different learner and possibly a different topic. This process of learning, though, does not evaluate critical thinking, but rather promotes rote memorization and repetition of information that has been shared or read. In collaborative reasoning, there is a dynamic multi-origin process of questioning and engagement with ideas and problems with the role of the learner shifting from the responder to the questioner, to the hypothesis maker and problem solver. Open ended questions are formed by asking "*why*,""*how*," and "*how do you know*?" prompts that stimulate conversations based on information that is drawn from students' experiences, readings, and observations to support claims (Waggoner et al., 1995). Students may reply and proceed with additional questions, or the teacher may open the forum for additional alternative responses. In that manner, there is not one, absolute, correct response, but alternatives that are evaluated through dialogic exchanges. Through this process of arguing, intellectual growth, learning, and critical thinking develops as students engage in conversation with peers (Felton, 2004; Kuhn, 1992; Rogoff, 1995). Thus, in collaborative reasoning the learner is:

- active to think about the topic, respond, and proceed with additional inquiry

- engaged to discuss with others as what they want to share matters and think about ideas on a topic
- stimulated to consider alternatives instead of providing a one-answer response
- challenged to consider alternative viewpoints
- metacognitively aware of different perspectives and reflective on their own

Students' interactions can take place in small groups after they are modeled by the teacher, and students' questions can expand from a basic "why" and "how do you know" to include the perspectives and questions of many others. Once students identify an argumentative pattern (or *stratagem*, see Anderson et al., 2001), they can build on it and expand it resulting in a snowball effect (Anderson et al., 2001) with reasons branching out to include evidence, opposing positions, and rebuttals. Throughout, the teacher functions as the facilitator who guides students' questioning processes. For instance, while reading a book the teacher may ask students to share their opinion about the character or identify a specific character trait and invite students to state their perspective. The teacher may advocate for a specific characterization that may be in opposition to what students suggest engaging them to seek evidence from their reading to support their claims.

Developing Strategic Learners and Collaborative Reasoning

In the Developing Strategic Writers Through Genre Instruction (Philippakos & MacArthur, 2020; Philippakos et al., 2015), we provide systematic instruction of the writing process and of goal setting for both writing and reading. Drawing from research on self-regulation (Harris & Graham, 2009), writing and reading connections (Shanahan, 2018), genre (Martin, 2009), evaluation (Philippakos & MacArthur, 2016a,b), and dialogic pedagogy (Bakhtin, 1981; 1986), teachers provide instruction that is based on gradual release of responsibility (Duke & Pearson, 2002; Pearson & Gallagher, 1983) and involves a transition from teacher modeling to student-teacher application and individual/independent practice. In the Developing Strategic Learners approach, sample writing models are used that provide well-written and weaker representations of the targeted genre for learners to critically read and evaluate them using a genre-specific rubric. Learners engage in evaluation processes in order to develop a schema of the genre's expectations while they critically read and reread to apply genre-specific evaluation criteria. For instance, when examining the presence and clarity of a position statement to the question, "Should learning be fully online for middle schoolers?" learners actively engage in understanding the point the writer makes. If this statement is not present or it is not clear to the reader, they evaluate it as such (e.g., I say No) and examine ways the author could have responded (e.g., It is imperative that learning is face-to-face for younger learners but should be in online formats for middle schoolers). The application of evaluation criteria develops a schema for the genre's text structure, linguistic features, and syntax (McCutchen, 1986) and also engages students in reading with the purpose of making meaning.

Overall, instruction is based on a strategy for teaching strategies that becomes the blueprint of all genre-based lessons (see Philippakos et al, 2015; Philippakos & MacArthur 2021; 2020):

1. Discussion about writing purposes, the genre, and its elements
2. Read aloud
3. Teacher explanation of the Writing Strategy Ladder (the writing process)
4. Teacher modeling of the "how to" write a response (modeling of rhetorical analysis and goal setting, planning, drafting, evaluation for revision, editing, sharing)
5. Evaluation of a well-written and weak paper
6. Collaborative practice
7. Guided practice
8. Preparation for peer review and self-evaluation for goal setting
9. Peer review and revision
10. Editing
11. Sharing

Considering that reasoning and arguing are dialogic and are based on oral exchanges, collaborative argumentation was utilized in supporting students' verbal exchanges prior to engaging in writing practice. Initially, this practice was based on developing responses to reading and expanding those to opinion writing (Philippakos, 2017; Traga Philippakos et al., 2018; Traga Philippakos & MacArthur, 2020).

In this instructional approach, students in the primary grades engage in collaborative argumentation during the read aloud in which the teacher models how to respond to questions about the character. The books that are used do not necessarily address opinion writing but evoke the opinion of the students as those books promote a dialog between the character and the reader (books by Mo Willems). As teachers read, they stop and ask questions about the character's actions evoking student's opinion on the topic (e.g., Do you think Pigeon should drive the bus)? As students respond with "yes" or "no", teachers provide sample opinion statements (e.g., I do not think that Pigeon should drive the bus) and display those sentence frames in writing indicting that they are part of the beginning of the response and of the opinion/position statement:

- From my perspective _____.
- In my opinion _____.
- I strongly believe _____.
- I think _____.
- I argue that _____.
- I am in favor of the voices of those who claim _____.

Teachers proceed with the provision of reasons sharing a reason that connects with the opinion (e.g., One reason Pigeon should not drive the bus is that he is not made to drive a vehicle) and explaining that reasons will appear in the middle of the paper and be introduced with transition words:

- One reason I think that _____ is _____.
- A second reason it is important that ____ is ____.
- An additional reason that explains why _____ is _____.
- A final reason to support the claim that _____ is ____.

Similarly, evidence or examples are provided that were drawn from the text or from the pictures the author shared with teachers explaining the origin of the evidence that supported a specific reason (e.g., In the book the author and illustrator shows that Pigeon is a small bird with wings. A driver would need to have hands to hold the wheel, legs to reach the pedals, and be able to sit on the seat of the bus. Pigeon's body is not made to be a driver but to fly in the sky).

- According to the author/illustrator _____.
- The author states that _____. I also know that _____.
- If _____, then _____.
- For instance, Author states _____.

At the end of the reading, teachers state the position again and explain that this would appear at the end of the response as the restatement of the position:

- In conclusion, I strongly believe _____.
- It is my belief that without any doubt _____.
- It is conclusive that _____.

Then teachers either model how to provide a written response using the writing process or conduct additional read alouds with students stating their positions, reasons, evidence, and restatements of position (see Traga Philippakos & MacArthur, 2020). In our work, we encouraged teachers to use other read alouds that were works of fiction (Nguyen-Jahiel et al., 2007) or nonfiction and pose questions for students to engage in reasoning and support students in developing their own questions and engage in arguments in small groups (Reznitskaya et al., 2009). This process of argumentation in small groups and engagement in oral argumentative discourse that is scaffolded for application of the writing process, transitions students to debate.

Scaffolding Debates

As in all oral exchanges all voices have something important to share and should be heard; however, without a procedure, they may overlap and result in

chaos of meanings and ideas. As Figure 1 depicts there is an exchange of ideas, but no side listens to the points that are made in order to provide a response. Initially, students are very motivated to only share their position and their reasons.

Figure 1. A visual representation of a continuous exchange of ideas

Group 1

Group 2

In a debate the point is not only for responders to share their reasons and position but to acknowledge the opposing view, respond to it and share their position and reason. This process requires that the responder will listen to the argument the peers make, respond to it first, show how it is not valid, and then reply with their reason (See Figure 2 with a visual representation of a debate).

When students argue with their teacher about the characters and their actions, the teacher is the mediator and the facilitator of the argument. However, when students transition to the context of a debate, they need to respond to the voices of those who support a different perspective and offer reasons for those. In debate formats we provide the following procedures:

Declarative Knowledge
- The teacher explains what a debate is and what arguing is. The teacher also addresses misconceptions students may have about arguing (not fighting and verbally engaging in insults).
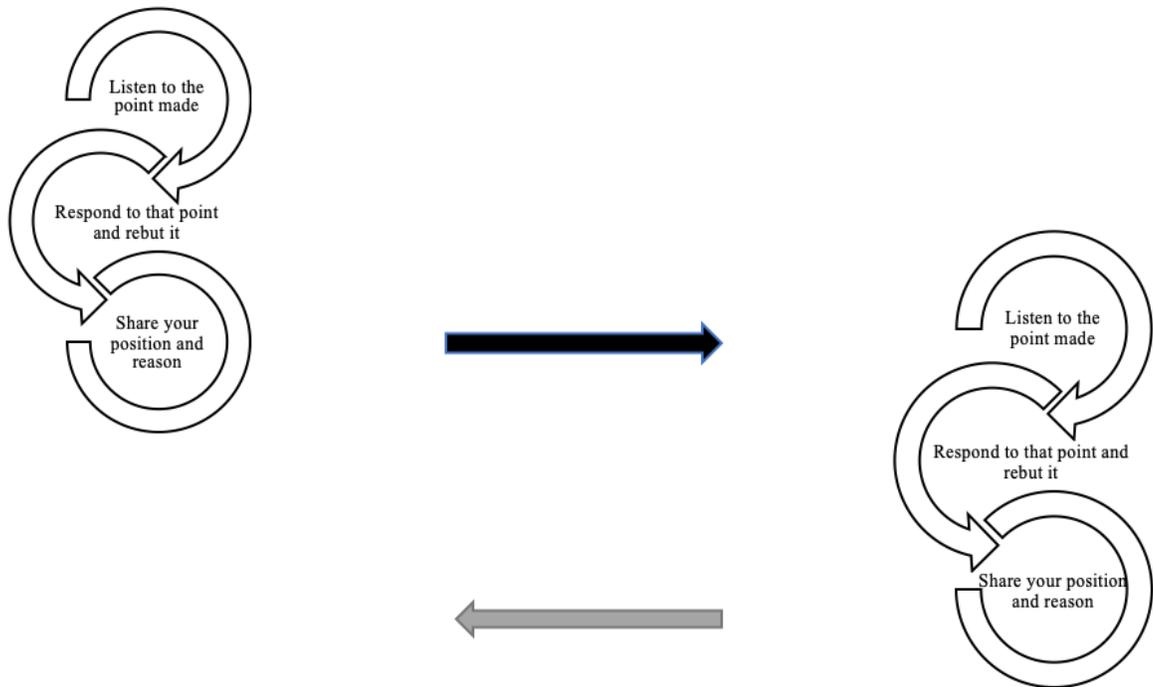
Procedural Knowledge
- The teacher explains that topics are often controversial and that such topics can stem from readings (e.g., Who is responsible for the population exchange of 1923 between Greece and Turkey after the fall of the Ottoman empire?), from environmental challenges (e.g., Is climate change an eminent threat to life on earth?), from technological advances (e.g., Does artificial intelligence interfere with misinformation in the media?) from judicial practices (e.g., Should juveniles be tried as adults?)
  - All examples are dependent on the level and grade of students.

Figure 2. A Visual representation of a debate

Group 1   **Group2**

- The teacher explains that the answer to controversial topics is not convincing to readers when it is a "yes" or "no," but requires the development of reasons, evidence from the text and from valid sources, acknowledgement of other people's views, explanations about the falsity of their claim, and a reiteration of the authors' position. The teacher explains that in an argument the author will need to state their reasons and evidence, provide the opposing position, and then show how those who support it are wrong before reminding the reader of their own position.

Conditional Knowledge

- The teacher discusses with students when they might be called to respond to controversial topics and when they will have to think of opposing views. Is it only when they write argumentative papers? Is it when they read? What does

thinking in this way (considering the voices of others who do not agree) do for learners?

Figure 3. Ideation to determine position

IDEATION

Brainstorm

In Favor (YES, _____ _____)	Against (NO, _____ _____)

- What is the position you hold? Cross the side you are against.

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Procedures
- The teacher then presents a controversial topic (e.g., Should fifth graders be allowed to bring cell phones to school and have them on during class?), information for both sides of the argument (e.g., in favor: cell phones can assist with note taking, can be used to take videos of teachers' instruction for students to watch as a reminder; against: cell phones can be used to cheat during tests, can be a distractions, students can engage in texting or off-task activities that can get them in trouble) and asks students to take a position.

Figure 4. Graphic Organizer (GO) for Argumentation.

Beginning		Topic:
		Position (What is my claim?):
Middle	ME	Reason 1
		Evidence 1
		Reason 2
		Evidence 2
		Reason 3
		Evidence 3
		Reason 4
		Evidence 4
	OTHERS	Opposing Position (What do others say? What is their position/claim?) 1. 2. 3. 4
		Reasons and Evidence (How do they support what they say?)
		Rebuttal (How and why are they wrong?):
End		Restate Position:
		Think:

- Students are then asked to think of the two sides of the argument (see Figure 3 with a chart to brainstorm ideas in favor and against), develop their ideas (brainstorm) and determine their position.
- Once they complete their ideas and select the side they support, they are divided into two groups based on the position they hold.
- As a group, students review the reasons they had individually developed and as a group now devise a common plan to respond to ideas presented by the other group. This plan may simply have the reasons and their evidence and space to record the opposing positions so they can keep track and rebut it (see Figure 4 with graphic organizer for opposing position).
- The teacher explains that when students respond, they need to acknowledge the perspective of the other team (e.g., The point that our classmates make that _____ is a reasonable one as _____.), and then proceed with a rebuttal in which they discredit them (However, we argue that _____. A reason we present is that _____. As it is shown _____).

Teacher Modeling and Facilitating

The teacher initiates the process by modeling for both sides and then scaffolds the back-and-forth responses between the groups and facilitates them. As in collaborative reasoning, the teacher displays the sentences for students to use as scaffolds when they provide their oral responses. The goal is for them to gradually become fluent in the use of those sentence frames and the logic of their presentation so when they observe the teacher model the writing, the language and syntax are familiar to them. Thus, they focus on the use of the specific strategies for the writing of argument.

Cautionary Notes

In our work with students and in our research, we first engage learners in debate without the use of readings with topics that do not require background knowledge (e.g., Shall we have school on Saturday?). Then once students know of the process and its components, they then can engage in note taking from readings to provide their reasons and evidence (Traga Philippakos & MacArthur, 2021). Note taking with the determination of what counts as a main idea involves reading comprehension, which is challenging for learners. Thus, in an effort to utilize the most of cognitive energy for meaning making, we first teach argumentative structures and formats as well as the needed syntax and vocabulary before we work with students on genre-based processes for note taking.

The challenge students face is often their ability to *closely* listen to the opposing side and the perspective presented by the other team. Providing reasons and evidence is something they have extensively practiced when working on collaborative reasoning. The challenge is for them to listen to the opposing view and reasons, respond to that first and then present their reason and evidence for the other team to consider. This process takes practice and time. The first-time teachers

engage in debate, modeling the response processes and facilitating those can significantly affect the overall experience as it creates the model of practice and behavior.

It is important that students have the opportunity to reflect on the ways that this process of questioning and thinking can improve their ways of thinking and processing information from their readings and in conversations with others. Being able to consider alternative positions supports the learners' decision-making processes and also their ability to be critical and thorough. This metacognitive thinking about the processes and strategies students use helps them reflect on what specific processes work for them so they utilize those practices in future tasks (Traga Philippakos, 2020).

Argumentation is a genre students encounter in middle grades; however, fourth and fifth-grade students can effectively consider and develop opposing positions in their work (see Philippakos & MacArthur, 2016a) and can entertain opposing perspectives. Further, engaging them in debates can broaden their way of thinking about issues and their ability to examine topics in a less egocentric manner considering multiple viewpoints and enhancing their critical thinking.

Modeling the Writing Process

Once students have completed the debate, the teacher models for students the planning and drafting of an argumentative paper using the planning material students have used. Since students have worked with their teacher on the writing of an opinion paper, it might be easy for them all to collaboratively work to plan, draft, and evaluate an argumentative paper; however, we have often found that the entire think-aloud modeling benefits all students.

Guidelines for Effective Implementation

Schools and classrooms have different programs and schedules to guide instruction. However, the instructional practices are consistently research based and evidence based. Collaborative reasoning with strategy instruction and debate could be implemented across discussion, reading, and writing tasks, independently of a program used. In order for effective implementation, it is helpful if teachers model the process of dialog and questioning in read alouds. Posing open-ended questions about characters and their actions and making visible and audible the ways to respond by addressing specific syntactic and genre expectations can guide students' responses. Also important is that students' misconceptions about what a debate is and what its components are, are addressed and meanings are clarified. Similar explanations are needed often with the term "argument." It is not uncommon for learners to misinterpret the term "argument" and think that it refers to fighting or speaking loudly. Explaining what argument is, how it is done, and learning how to engage in it and write it can support students in school and out of school and can increase their engagement. In the initial work we conducted we included collaborative reasoning with strategy instruction for learners in kindergarten

through grade two; however, when working on argumentation (at the end of elementary grades and in middle grades), we scaffolded students' understanding about argument, its function, its process, and structure through debate practices before students observed how to plan, draft, evaluate to revise an argument (through teacher modeling) and constructed their own arguments after collaborative practice. It is also important for students to be encouraged to broaden their questioning and inquiry across contexts and across domains. Thus, once students are critically questioning characters, and actions, they question clarity of reasons, actions of historical figures and phenomena. Questioning should be encouraged as critical thinking and arguing are applicable across domains and subject areas.

Conclusion

This paper began with a commentary on the value of oral language and of collaborative reasoning that engages students in dialogic interactions and to learning through oral discourse. Then it transitioned to explain the genre-based writing approach of the Developing Strategic Learners curriculum (Philippakos & MacArthur, 2020; Philippakos et al., 2015; https://www.developingstrategicwriters.com/) and how writing connects and builds from oral language. What is important to consider in this work is the role of oral language and how it scaffolds writing across grade levels. Social interaction supports individual thinking and the development of reasoning (Cazden, 2001; Vygotsky, 1981). The dialogic practices lead to the appropriation of cognitive practices and skills that individuals can apply independently and across contexts; Thus, the collaborative reasoning and debating practice can support them in formulating ideas for argumentation and developing convincing arguments. Indeed, "social dialogue offers us a way to externalize the internal thinking strategies we would like to foster within the individual" (Kuhn, 1992; p. 174). We do not claim that oral language practices alone can lead to improvement of written discourse and especially argument which is a challenging genre (Ferretti & Fan, 2016; Ferretti & Graham, 2019). Such transition from oral to written language can be challenging to learners (e.g., Knudson, 1994); In our work, we advocate for a combined instruction that utilizes oral language and systematic instruction of writing building students' vocabulary, syntax, schema on argumentation, and use of strategies for goal setting and the application of the writing process. Thus, we urge for the use of oral language and dialogic interactions as a way to support thinking, listening, speaking, and writing.

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