BUILDING INTEGRATIVE ARGUMENTS: STUDENT IMMEDIACY AND COLLABORATIVE REASONING DISCUSSIONS

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Synopsis:

Despite the research and need for dialogic learning in classrooms, teachers still hesitate to implement this method. As many of the studies done on collaborative discussions, focus on pre-and post-discussion essays, there is still a need to understand the interactive processes that take place during these discussions that have led to promising outcomes. This paper aimed at exploring the relationship between student dialogic moves and the arguments proposed in the discussions.

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Introduction

In the past few years, educators have been concerned with the traditional discussion method that may limit the way children talk and think in school (Clark et al., 2003). Among numerous discussion discourses, the 'teacher Initiation – student Response - teacher Feedback (IRF model) is the most common discussion pattern implemented in schools (Cazden, 2001; Clark et al., 2003). In IRF model, students respond to the questions provided by the teacher and therefore, students reacting largely to the teacher's perspectives. If students are able to initiate more of the discussions and explore different perspectives proposed by their peers, then they are able to experience more cognitive conflicts and develop critical thinking skills. In other words, even though discussions have been deemed engaging, there is a need to understand how to facilitate the cognitive conflicts that will enhance students' critical thinking.

Numerous bodies of literature explore Collaborative Reasoning (CR) discussion model that has been deemed effective to enhance students' critical thinking and reasoning skills (Clark et al., 2003; Nguyen-Jahiel, et al., 2007; Sun et al. 2015). Collaborative reasoning (CR) discussion is a form of a dialogic learning that allows students to discuss controversial issues based on policy, moral and scientific quarry. Upon reading stories individually, students engage in a discussion that requires them to respond to the issues raised in the story and to support their stance with evidences and reasoning. In addressing the controversial issues in CR, children may challenge their peers' arguments and encounter cognitive conflicts (Kim et al., 2007). More specifically, Clark et.al (2003) indicated that engaging in "reasoned argumentation" enables students to consider the "contrasting perspectives on the issues" and question or reflect their own thinking (p. 183). When students accommodate the different perspectives, they are engaged in a higher order of thinking skills because they learn to weigh both argument and counterargument. The way students addressing the contrasting perspectives can be seen through the proposal of the integrative arguments that address both the pro and cons of the issue.

As explained by Kumpulainen & Kaartinen (2003, p. 334), "the quality of learning in peer groups is closely associated with the nature of the collaboration and interactions that learners engage in while working on academic tasks." Recent research argued that immediacy, interactive moves that an individual makes to build rapport within a group, is a key element to productive learning (Barron, 2003; Lin et al., 2018; Woods & Baker 2004). More specifically,

verbal immediacy, which is selected interactive behavior to enhance physical or psychological closeness in interpersonal communication play a prominent role in the group dynamics. Verbal immediacy demonstrates the communication process in the discussion and the way the discussants engage one another.

Studies thus far have proven that teacher immediacy moves, which is teachers' communicative behavior, contribute to the success of the collaborative discussion. However, the student communicative behaviors during interpersonal communication remains under-explored. This paper addresses that gap by examining the correlation between students' verbal immediacies and the types of argumentations presented in the discussion. By exploring both verbal immediacies and argumentation types, the study aimed to untangle the correlation between peer interactions in a group discussion and to understand how the interactions facilitate cognitive conflicts and therefore more advanced reasoning skills.

Theoretical Framework

Children may challenge their peers' arguments and encounter cognitive conflicts when they address controversial issues in CR discussions, which facilitates the development of their critical thinking (Kim et al., 2007). The conflicts may lead to the proposal of integrative arguments, in which students partially accept and accommodate the counter arguments. More specifically, Leitao (2000) classified integrative arguments into allowing an exception, formulating a condition, changing a degree of certainty, and modifying an original position to account for a counter argument. These types of arguments demonstrate cognitive conflict and aid in the development of complex reasoning skills because they force students to weigh reasons for argument and counterargument. In other words, the existence of integrative arguments in a discussion is important because it is evidence that students listen to their peers and accommodate different perspectives.

While the integrative arguments signal the development of critical thinking, this element itself might not be sufficient to establish a dynamic group discussion. The quality of learning in peer groups cannot be separated from the nature of collaboration and interaction among the participants (Kumpulainen & Kaartinen, 2003). To understand the interaction in a collaborative learning, it is important to examine the verbal immediacies appeared in the discussion. Lin et al. (2018) classified verbal immediacies into three main categories, namely cognitive immediacy,

social immediacy and emotional immediacy. Cognitive immediacy refers to dialogic moves that build on others' ideas, ask authentic questions, elicit information help, link ideas, and restructure understanding. Social immediacies are dialogic moves that promote equal participation and maintain social order, while Emotional immediacies refers to dialogic moves that support positive affect, closeness, and emotional understanding.

As this study focuses on the interaction during a discussion, this study analyzed cognitive verbal immediacy. Cognitive verbal immediacy is the most related immediacy to arguments being presented during discussion and therefore allowed the researchers to focus on the correlation between Immediacy and Integrative arguments. Our hypothesis is that when students perform verbal immediacy or verbal dialogic moves in the discussion, they listen to their peers' perspectives and learn to weigh reasons for both sides, the arguments and counterarguments. Hence, it is expected that the more immediacy moves present in the discussion, the more integrative arguments are proposed in the discussion.

Method

Data analysis was conducted by examining twenty-four CR discussion transcripts for six group of students. Each group comprised of six to eight fourth grade students in a public school. Prior to identifying the verbal immediacy of the discussion, we examined the communicative properties of these dialogues based on the Communicative Situation structure of Hennessey (2016) and Hymes (1996). The discussion transcripts were divided into three main components, namely Communicative Situation (CS), Communicative Events (CE), and Communicative Acts (CA). CS is indicated by the main question of each discussion, CE is represented by the subtopics in the discussion, while CA refers to the utterances the students produce in each subtopic. The transcripts were analyzed and coded qualitatively based on the theories of verbal immediacy (Lin et al., 2018) and argument stratagems (Nussbaum & Edwards, 2011). Using the work by Lin et al. (2018), we identified the cognitive immediacies (CI) in the discussion transcripts.

Upon identifying the CI of the discussion, we determined the type of the arguments based on the theory of the integrative arguments proposed by Nussbaum and Edwards (2011). We coded the integrative arguments into four main categories, namely conditional reasoning, accommodating position, accommodating conclusion and group consensus accommodating

conclusion. Upon identifying the types of the immediacies and the integrative arguments, the quantitative analysis was conducted using *Pearson's Product-Moment Correlation* to determine the correlation between the two variables. Lastly, qualitative analysis was conducted to evaluate how immediacies and integrative arguments function and correlate in the discussion.

Findings

The initial statistical findings indicated a positive correlation between cognitive immediacy moves and the presence of integrative arguments ($r= .413$, $p= .046$). More specifically, as can be seen in figure 1, there was an upward trend suggesting that the higher the number of cognitive immediacies in each group (X) present, the more integrative arguments (Y) were present in the discussion. However, there was one case showing that the high number of immediacies did not result in a higher number of integrative arguments.
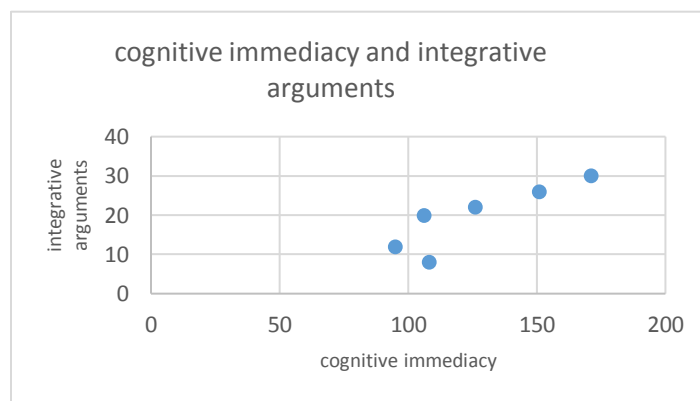

Figure 1. Scatter plot of cognitive immediacies and integrative arguments

A deeper analysis was conducted to identify the factor that may cause the exception. The result indicated that unlike other groups, integrative arguments in group 2 of Ms. Janek's class were proposed by three same students only over the series of CR discussion. Meanwhile, in other groups, the immediacies and integrative arguments were proposed more evenly among the discussants. In Ms. Anthony's class, there were six different students proposing integrative arguments from CR 1 to CR 7 in group 4. The same case occurred in group 1 of Ms. Anthony's wherein six out of seven students took turn to build the integrative arguments over the series of CR discussions. Similarly, in Ms. Logan's class, eight students in group 1 and five students in group 3 proposed the integrative arguments. In other words, when verbal immediacy amongst

group members is more ample, then more members are likely to participate in the process of making integrative arguments.

Further narrative and thematic analysis demonstrated that groups with more immediacy moves more likely developed complex reasons by linking textual evidence to real-life experiences and asking questions, especially when textual evidences were insufficient to support their stance. These immediacy moves resulted in two types of integrative arguments: conditional reasoning and accommodating position. Students formulated conditional reasoning when they learned that there was insufficient evidence from the texts. They drew a connection between the issue and their prior experiences or knowledge. In CR# 5, whether or not we should put a coat on a snowman, group 1 of Ms. Anthony's class, began to discuss the importance of the color of the coat:

Fred   : How do we know if the coat is black? Well- Well, black absorbs the sun better.
Isabel   : It absorbs it better.
Isabel   : It doesn't mean that other colors---
Samuel   : Yeah but it absorbs the light

This discussion began when Fred was hesitant to take a position and instead proposed a question about the color of the coat and how it might influence the heat absorption. This one student saw the color of the coat as an important missing piece to whether putting a coat on a snowman would lead to the snowman melting. Some other students built on the idea he proposed, which resulted in a shift in the degree of certainty about their initial position. They could not find the information in the book and thus, they were less certain if people should put a coat on a snowman. Because of the group's verbal immediacy moves building on that one student's initiated idea, several students joined in this idea and discussed both the color and the materials of the coat. They worked collaboratively and addressed the gaps in information from the text to formulate a solid position resulting on the proposal of a conditional reasoning: if the coat is black and fuzzy, they should not put a coat on a snowman.

Another example of conditional reasoning is proposed in group 4 of Ms. Anthony's class, begin asking authentic questions about where the snowman lives.

Sofia   : ……. Uh-huh so I have a personal experience about that, so but I don't really know umm, where do they live? so it depends if it's usually cold outside all the time [2][2] Or it's near- or it can get to be hot but it just [3][3] like in Seattle it snowed this Christmas but we don't know if it's gonna rain again and my other evidence is because just because they put it in a cooler it doesn't mean it because a coat and a cooler are way different

Charles   : or if it is near equator

In this CE, there were two immediacies found, which are linking the issue to a personal experience and asking an authentic question. Those two immediacies resulted in the proposal of conditional reasoning that whether or not to put a coat depends on where people build the snowman. Even though adult readers might automatically think that it would not be possible to build a snowman near the equator, the discussants addressed the fact the article took for granted where the snow is.

The findings of accommodating position indicated that students in groups that have more immediacies linked textual evidence and experiences to weigh the reasons for both positions. Meanwhile, in groups with less immediacy, students focused on citing textual evidence or experiences that are in favor of their initial stance. For instance, in CR#7: Should 13-year-old boy be allowed to climb Everest? Ms. Logan's group 1, there are a high number of building off each other's ideas, but only one verbal immediacy linking an idea to textual evidence. As such, students cling to personal experiences and preferences such as "well, I wouldn't do it, it's just crazy" or "I like to run, but I wouldn't race the Flash". Here the student ignores the textual evidence that suggests the boy has trained and is ready to climb Everest, and other students in the group only agree, equating the Flash with Everest. This leads to a group consensus that ends similar to how the discussion began. Meanwhile, in groups where verbal immediacies such as asking authentic questions or linking ideas were present, the discussants made a modified conclusion from their initial position. For example, students asked how much has the boy trained or linked the story to another story by Jon Krakauer who discussed how other people died on Everest. Students then proposed integrative arguments such as let the boy climb other summits first or that he should climb half of Everest first.

Discussion

This study explored the correlation between students verbal interaction in a group and the integrative arguments proposed in the discussion. Overall, the results indicated that the more student immediacies or students dialogic moves presence in the discussion, the more students built integrative arguments, which incorporate an opposing argument by weighing its importance. The types of the integrative arguments proposed in this study were conditional reasoning and accommodating position. Additionally, the presence of student immediacies (e.g.

asking questions, linking ideas, building on others' ideas, restructuring understanding) and integrative arguments leads to a more robust discussion that takes into account both the textual evidence and personal experience. The lack of these elements led to using textual evidence or personal experience only to solidify a staunch position and therefore weaker argumentation.

Without the presence of varied verbal immediacies, integrative arguments remain scarce or non-existant within a discussion. Without these elements, the discussants conclude their discussion with the same position with which they began. This is notable because in the case of these CR topics, less certain positions were a product of realizing that participants didn't have sufficient evidence to completely negate the counterargument. Therefore discussions where verbal immediacy led to more integrative arguments and less certain final positions are evidence that cognitive conflict is taking place and therefore the development of complex reasoning skills.

The findings of this study support and expand the previous study on the impact of asking critical questions in argumentation (Nussbaum & Edwards, 2011; Chambliss & Murphy, 2002). In line with what their study found, this study indicated that asking authentic questions helped students weigh the reasons for both the 'yes' and 'no' positions. Additionally, this study showed that not only asking questions, but also linking ideas, restructuring understanding, and building on peers' ideas yielded more integrative arguments and thorough exploration of the discussion issues. Herzog and Hartwig (2009) argued that when students work collaboratively to synthesize numerous hypotheses, they are more likely to gain more comprehensive understanding of the complex issues. This claim supported our finding that in groups where students created conditional reasoning and accommodating positions, the exploration of the issue is more thorough. Students linked both personal experiences and evidences from text to address the big question raised in the discussion.

Another important point to note is that as the group explored the issues by asking authentic questions, linking ideas or restructuring understanding and proposed integrative arguments, their discussion might seem off topic. In CR#7 for example, students questioned the previous training the boy has got; some of them connect the issue to the story of Jon Krakauers, while some others talked about the possibility of him to climb other summits first prior to climbing the Everest. They did not directly state their stance and explained the reason for choosing a particular position. While most of the time being off topic is considered ineffective, teachers need to be aware that to generate more "plausible reasoning and more reasonable

solutions", children are more likely to "incorporate various kinds of resources" (Wen, 2020, p. 51), making the discussion broader.

Ultimately, we noticed that groups where cognitive immediacies were present, as were conditional reasoning and accommodating positions, experienced changes of degree of certainty about their position. As students listened to different perspectives proposed by their peers and acknowledged numerous alternatives to approach the issue, they reconsidered their initial positions. While strong positionality is a goal of argumentation, so is having adequate evidence to back the claims. Without both cognitive immediacies and integrative arguments, students are more likely to solidify a staunch position without considering what might be missing and therefore perpetuate weaker argumentation

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