Learning to Participate in Disciplinary Discourses: What Happens When the Conversation Ends?

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Abstract: Current research has found that participation in meaningful, disciplinary conversations in the classroom helps students develop their conceptual understandings of the subject matter. These findings are often shown through descriptions of design interventions that have taken place in ordinary classrooms. Little attention has been paid, however, to the diverse experiences of individual students within these contexts and what they take away from participation in such discourses. This longitudinal study followed two students who were active student participants in a design intervention that promoted disciplinary engagement in science and history through the following school year. The study found that the style of student participation in classroom discourses depended on the unique dispositions of the students themselves, but that this participation could be either encouraged or stifled by the participant structures that were made available by the curriculum and the teacher

Recent work in education has explicated the importance of having students participate in classroom discourses that reflect disciplinary thinking (Leslie R. Herrenkohl & Guerra, 1998; Lampert, 1990; Lemke, 1990; Polman & Pea, 2001; Shulman & Quinlan, 1996). One underlying purpose of this pedagogy involves exposing students to the intellectual practices of the disciplines. Another concerns student engagement and the importance of attracting students to engage with some meaningful question or topic through inquiry. Classroom reforms and design interventions involving "communities of learners" (Brown & Campione, 1994; Engle & Conant, 2002; Rogoff, 1994), "writing workshops" (Lensmire, 2000), and other similar ideas under different names have explored the potential of engaging students in knowledge-making practices which involve students in larger communities of discourse in the disciplines. The presentation of findings from these research pursuits have generally reflected positive changes that can occur in such classroom environments. Researchers report a high incidence of participation across diverse student populations, leading to more sophisticated understandings of the subject matter content and more disciplinary-appropriate ways of approaching new information.

One place in the literature that illustrates how disciplined inquiry can lead to productive student engagement in disciplinary discourses is Engle and Conant's (2002) analysis of a small group within a particular fifth-grade class involved in a science unit on endangered species. According to these authors:

> "A controversy emerged in this group of students over whether killer whales (also called orcas) are whales or dolphins…Given the nature of the question and the students' initial lack of interest in whales, it may seem surprising that they were interested in discussing the orca's classification at all. The group nevertheless passionately argued the question of the orca's classification…for more than 27 min[utes] in class. This discussion was what one student later referred to as a 'Big Ol' Argument'" (p. 412).

Engle and Conant go on to describe how the Big Ol' Argument (BOA) resurfaced many times over a period of eight weeks, leading students to research further into scientific sources to settle the controversy. In analyzing the potential sources of this engagement, these authors propose four principles for fostering productive disciplinary engagement, and they carry out a detailed analysis of the classroom discourse data in light of these principles. The analysis includes the roles of students and teachers in the process of inquiry, the norms of discourse, and the disciplinary nature of the tasks that students were given. While such an analysis usefully furthers our understandings of how "to make productive disciplinary engagement more likely" (Engle & Conant, 2002, p.

459), I will argue in this paper that an important consideration has been neglected in this piece of research and in others like it: namely, the roles and contributions of individual students.

What can we assume about students who participate in disciplinary discourses in the context of their classroom lessons? Can we assume that the participant structures (Phillips, 1972) or the nature of the questions played the largest role in shaping their engagement? Should we be skeptical and wonder whether students in fact brought these intellectual dispositions with them into the classroom? Can we assume that these students have "learned" a way of communicating that they will take with them into new settings? In Engle and Conant's (2002) description of the students who were involved in the BOA, the characteristics of the students, their relationships to each other, and their positions in the larger class receive no mention. In this paper, I will put forward an argument that explores the potential problems that result when we do not understand and describe our students with the same detail that we use to describe our teachers and our curriculum.

My interest in these issues stems from my own research experience in a design intervention classroom with a research project called PATHS, which in many ways resembled the classroom described above. As I have analyzed the patterns of participation across the classroom, I have noticed that some students picked up and used the disciplinary discourses made available by the curriculum more than others. Some students simply "shined" more than others as they were creating their own theories or challenging others' assumptions. The questions that this raises, as I have mentioned above, require thinking critically about the participants, how they fit into the discourses of the classroom, and what different students take away from such an experience. To investigate this issue, I have conducted a two-year longitudinal case study of two students who participated in the PATHS research project during their sixth-grade year and followed them into their seventh-grade classes in middle school. The two research questions that have guided this inquiry are: (a) What are the characteristics of students who were active participants in disciplinary discourses? (b) Do these students spontaneously take up these ways of participating in future forums of conversation?

Research Settings and Participants

To investigate the above research questions, a case study involving two focal students was conducted. The two students were sixth-grade participants in PATHS (Promoting Argumentation in the Teaching of History and Science), a NSF funded study that aimed to explore students' epistemological understandings of history and science, and to find ways that pedagogical structures in the classroom could foster connections across these seemingly disparate disciplines (see Stevens, Wineburg, Herrenkohl, & Bell, in press). Through units of history and science, students engaged in building and defending their own theories, talked about the nature of evidence, and developed understandings of the topics introduced in the classroom. Curricular materials introduced in the classroom assisted students in these cognitive, social tasks. The classroom environment transformed the role of students from passive listeners to active participants in the creation of meaning. The teacher in this classroom, Mrs. Garrett, shared a similar educational philosophy with the project aims which emphasized supporting students through the process of creating their own knowledge.

The focal students in the current research study were originally chosen by their sixth-grade teacher to be interviewed periodically throughout the year in conjunction with the PATHS study (Year 1). Because of the extensive amount of data on each student obtained through these interviews (five 45-minute interviews across the school year), these two students were desirable candidates for recruitment into the current, longitudinal study. In addition, both students participated frequently in classroom discussions during Year 1, which further made them subjects of interest for the current study. In the school year following the PATHS study (Year 2), I followed both students into their seventh-grade classes, their first year of middle school.

Data Sources and Methods

Data collection in Year 2 involved repeated observation of each of the focal students in the context of their social studies and science classes. These two school subjects were chosen for their correspondence to the subjects represented by the PATHS project, based on the assumption that similarities in participation and discourse might be more likely to emerge in similar domains of knowledge. I observed approximately once weekly for five or six weeks in each classroom. One student's social studies class is not included because the teacher declined to participate in the study. Tape recordings were made when possible, but the data collection was mostly comprised of my own field notes and observations. The purpose of this observation was first, to

observe the focal student and how he or she interacted and participated in classroom discourses, and secondly, to understand the social context itself.

Because of my interest in further understanding the personal characteristics of these students and also the meanings that they were constructing about their own selves in the context of particular school settings (Bruner, 1990; Holland, Lachicotte, Skinner, & Cain, 1998), I conducted interviews with each of them at two points during Year 2. The interviews were conducted at the students' homes, and followed a semi-structured interview format involving questions about current classroom experiences, perceptions of themselves as students, and about their activities and relationships in and outside of school. Interviews with each focal student's parents and with their social studies and science teachers were also conducted. These multiple data points served the purpose of triangulating my observations of the students' participation in their classes (Erickson, 1986; Yin, 1984) with the students' own perceptions of that participation and with the insights of others who knew the students personally.

A Description of the Participants

Alicia: Sixth Grade

Alicia, a Caucasian female, stood out immediately in the sixth-grade classroom as we began our PATHS curriculum. She asked insightful questions and often went beyond the material at hand to make sense of the subject matter. During a mid-year science unit on Sinking and Floating, Alicia emerged as one of the major contributors to classroom discussion. In this science unit, where students worked in groups to create and define their own theories about why things sink and float, Alicia's engagement in defending her own theory and challenging other students' theories defined her as a particularly "motivated" student. Alicia spent time researching the concepts involved in Sinking and Floating on her own time in an attempt to make sense of it. Following this unit, when asked during an interview whether she could imagine herself becoming a scientist someday, Alicia reflected: "Yeah, because I like science a lot. It's really fun to do experiments and make theories and have evidence and stuff. It's fun."

For Alicia, having a chance to explore her own ideas in detail, and having these ideas challenged by others, was an exciting experience. Her teacher, Mrs. Garrett, attributed Alicia's engagement in terms of her own disposition as a student, stating that Alicia "was so curious and so willing to put herself out there and make a mistake, and work through it, and sort of celebrate from that." Given Mrs. Garrett's description of Alicia as a student and the observations of how Alicia interacted with the substance of the PATHS curriculum, one can draw the conclusion that a high level of compatibility between this student and context existed and enriched her experiences.

Alicia: Seventh Grade

In seventh grade, Alicia's levels of participation in her science and her social studies classes looked quite different in each of these contexts, but a discussion of this makes little sense without considering the contexts themselves. First, it is important to note that Alicia chose honors level offerings in both social studies and science.[1] According to both of her teachers, the students who took honors level courses not only came to the classroom with stronger academic backgrounds and more parental support, but they were also expected to perform at a higher level than was expected of students in the regular classes. Despite these differing expectations, however, both teachers admitted that the curriculum for honors classes did not differ significantly, apart from the inclusion of more "higher level" questions. The activities in science class involved reading the textbook for new information, completing worksheets for learning and review, doing labs, watching demonstrations, and taking tests. The discourse that the teacher, Mr. Ormrod, utilized during classroom conversations resembled the traditional I-R-E sequences that have been illuminated in numerous place in the literature (Cazden, 1988; Lemke, 1990). Alicia's social studies class was comprised of a number of different, traditional and non-traditional, classroom activities, including textbook reading, completing maps, library research for projects, Socratic seminars, and social activities that demonstrated key concepts. Mr. Magnuson, the teacher, utilized different styles of discourses within these discourse activities, sometimes resembling Mr. Ormrod in his I-R-E like control of the conversation, sometimes taking a hands-off approach during activities like the Socratic seminars.

As stated before, Alicia's participation in these two contexts differed from each other to some degree, and from her sixth-grade experiences to a greater degree. In science, she rarely participated in classroom discussions of scientific concepts. She sometimes raised her hand to supply an answer as the teacher was reviewing the material but this participation rarely exceeded a few words or a sentence. Mr. Ormrod classified Alicia as an average student among this honors class, perhaps above average in the seventh-grade, and described her as being a "chatty" student, meaning that she spent more time socializing than focusing on schoolwork.

Participation in social studies for Alicia occurred more frequently and also involved considerably more interjection of her own ideas and opinions into the classroom conversations. As Mr. Magnuson describes her, Alicia is "very energetic" and "has a lot to say". This class generally was more energetic and outspoken than the science class, and they were also given more opportunities to express themselves. Mr. Magnuson mentioned Socratic seminars, in which particular books were discussed, as the activity in which Alicia really stood out among her peers. During more textbook and worksheet-centered work, however, Alicia participated less frequently and according to her teacher, sometimes handed in less than satisfactory written work. Alicia reflected on this difference in herself in middle school, stating during a Year 2 interview, "I really don't pay that much attention in class because these days, it's not that interesting…It's just laid out and you breeze through it."

Jeremy: Sixth-Grade

Jeremy is a Caucasian, male student. Unlike Alicia, he did not immediately stand out as one of the main participators in the classroom conversations for any of the five PATHS units, and similarly his teacher stated that he did not engage as much as she had expected. A closer analysis of the data set, however, has found that Jeremy participated deeply in several key controversies that transpired in several of the units. His role in these discussions less often took the form of theory-building or proposing new explanations, as Alicia's did, but rather as a challenger to others' propositions and claims. These challenges, however, were theoretical and focused. In addition to the publicly spoken statements that he made, Jeremy can also be observed, through careful review of the videotaped class sessions, making side comments on what was being said. These comments, which often involved making remarks to students sitting near him, show that often throughout the course of these conversations, Jeremy was quite engaged with what was being said. In his own description of his participation after one of the units, however, Jeremy did not identify himself as someone who participated much, stating that he mostly listened to the arguments that others were making. Additionally, as found through his interviews, Jeremy did not identify himself as someone who might become a scientist or a historian someday. Thus, while engaged in pertinent disciplinary discourses, he did not see himself in these disciplinary roles, in present or in future imagined contexts.

Jeremy: Seventh-Grade[2]

Jeremy, unlike Alicia, did not opt into the honors classes during his seventh-grade year. However, as stated before, regular level science classes were found to be similar in format and content to the honors classes. Ms. Kabinski, Jeremy's science teacher, reflected that her regular science classes compared with the honors level in that "the honors class…is a lot more, they go a lot more in depth with whatever we're talking about. They can take it to another level." The similar attitudes between all of the teachers interviewed about this topic is interesting to consider in light of the way that classroom expectations for particular students and for groups of students get construed. Although Ms. Kabinski's class, according to my observations, included all of the same elements of activity and discourse (worksheets, two-person labs with lab notebooks, textbook reading and going over answers in class in an I-R-E type dialogue) as did the honors science class, students in the honors sections were viewed as more capable of extending the discussion and answering more complicated questions. In both contexts, however, the students' main means of entering into scientific conversations was by answering specific questions posed by the teacher, usually during the task of reviewing or filling out homework assignments or other worksheets.

The changes observed in Jeremy's patterns of participation within this context as compared to the context of the sixth-grade PATHS units were not as dramatic as in the case of Alicia, but were nonetheless noticeable and present. In seventh grade science Jeremy became a much quieter member of the classroom. During my period of observation, he did not once voluntarily participate in whole class conversations. According to Jeremy, he participated more at the beginning of the year, but had stopped doing so over time (my period of observation began in the winter). He did not give any direct explanations for why he thought this was the case. When asked about participation in social studies, he said that his involvement depended: "If I know what I'm

talking about and somebody's saying something wrong, then I'll participate a lot until they change their mind." Although I was not present in his social studies class to make my own observations of his actions, I have noted that this reflection matches his patterns of participation observed during his sixth-grade year. In seventh-grade science, it seems the lack of opportunity to engage with the material and with others in this way may have left Jeremy with very few avenues of personally meaningful participation.

Research Findings: Analysis and Implications

These student descriptions, which admittedly are sketchier that I would prefer given the space constraints of this paper, have thus far answered the research questions very indirectly. In this section, I will lay out more explicitly what conclusions are to be drawn from these two cases. First, to answer the question about what are the characteristics of students who actively participated in the disciplinary discourses during the PATHS implementation, some similarities and differences between Alicia and Jeremy can be discussed. In terms of similarities, *controversy* should be noted as something that encited participation. Both Alicia and Jeremy showed up in the conversation most often when the topic being discussed was contentious in some way. As Alicia has stated in interviews, she *likes* arguing. Interestingly, although Jeremy did not identify with arguing in quite this same way, he displayed many of the same dispositions throughout the course of the conversations. Another similarity, which should not be overlooked, is the fact that both of these students are white. While their sixth-grade classroom was diverse, and certainly not only white students had important roles in the conversation, we must be aware of the fact that as white students, these students potentially brought more cultural capital to the classroom situation than perhaps some of their peers. A third point, considering possible cognitive similarities, both students displayed an ability and willingness to grapple with the open-ended nature of the questions that were presented through the curriculum.

The differences between these two students during Year 1 involve divergent levels of identification with the particular questions being explored. Alicia was highly motivated to find answers to the questions that the curriculum posed. This was evident in her struggling to provide and defend plausible explanations and in her work outside of the class to make sense of the issues. Jeremy, on the other hand, was less involved in providing or finding these explanations (as following Sinking & Floating he claimed "I don't really have a theory"). What did motivate him to participate, it seems, were the discrepancies in others' thinking that he could pick up on and argue cogently against. Thus, even students with different levels of interest and investment in a particular topic or disciplinary approach can come to a conversation with room to participate, given that the participant structures of the classroom are at least conducive to the student's style of communicating.

The second research question asks: what happens when students who participated in these discourses move to a new social context? My research findings in Year 2 suggest that neither student spontaneously took up the discourses and ways of participating utilized during Year 1. Even though both students attained a certain level of proficiency in Year 1 with questioning ideas and sources, proposing new explanations, and evaluating theories in light of disciplinary norms, they did not simply engage in this way during their seventh-grade classes. This finding is not totally surprising given what we know about the social and cultural nature of human interaction (Cole & Means, 1981; L. R. Herrenkohl & Wertsch, 1999; Wertsch, 1998). However, I suggest that this finding is important for bringing a new awareness to both researchers who innovate these classroom environments and to their critics. In Year 1, when these two students were given the opportunity to participate extensively in the creation of meaning in the classroom, both engaged in ways unique to their own personal dispositions. In Year 2, especially in science, these differences were concealed as students generally became defined by the extent to which they fit the teachers' mode of questioning. Thus, while the dispositions of both students undoubtedly contributed to their style of participation in Year 1, the lack of appropriate learning environments in Year 2 would have made these differences less visible had I only encountered these students in the second year. Both focal students, for instance, were viewed as pretty average kids in their seventh-grade science and social studies classes when their favored ways of participating were not represented or encouraged in the discourses of the classroom. What I am suggesting here is that important, complex interactions between students and their social contexts occur, and we should not reduce our explanations to favor either internal student dispositions or environmental affordances and constraints.

The findings obtained in this study are limited by the nature of this case study approach to the problem. Ideally, a range of students who both did and did not participate regularly during Year 1 would have been studied

in their seventh-grade contexts. Unfortunately, the data collected on these students during Year 1 was lacking. My current research involves exploring and thinking critically about the student positions of a range of students in the classroom, how, given their different histories and dispositions, they come to experience classroom participant structures differently, and thus engage with others and with the subject matter in qualitatively different ways.

Endnotes

(1) The middle school offered honors English and math courses, which students had to qualify to take. Additionally, at the time this study was conducted, the school also began offering honors social studies and science classes, which students could opt into.

(2) Unfortunately, due to a teacher's inability to participate in the study, observational data does not exist for Jeremy's social studies class, although he did respond to questions about this class during his interviews. Reports here will involve only his participation in science.

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