Promoting Student Discourse in a Linguistically Diverse Community-of-Learners Classroom

My name means "ring finger" in my native language, Bengali. My parents chose this name for me because of the cherished Vena amoris, the vein that supposedly runs straight from the fourth finger to the heart; the reason why we, in some cultures, wear a wedding ring on the "ring finger." Although modern science has since debunked the unique qualities of this vein, my parents' idea remained and I wanted to love my name because of its unique backstory. However, every teacher, adult, and peer that mispronounced my name, despite corrections or even neglecting to ask about its pronunciation, forged a disconnection from my name, language, and ultimately, my culture.

During my time in the Teacher Education Program (TEP) at UCLA, I deconstructed this distance I felt towards my culture and self because of my resistance to my name. As Kohli (2012) mentions, "The mispronunciation of [their] name is an additional example for that student that who they are and where they come from is not important" (p. 445). As an educator, I aspire to teach the whole person, which begins with getting to know the student for who they are–including their name. Furthermore, I want to acknowledge and incorporate the multitude of funds of knowledge that my multicultural students bring into the classroom, from the various languages they speak to their vast life experiences (Moll et al., 1992).

Contextual and Theoretical Framework

I am currently working in a school located in the heart of South Los Angeles. On every corner, I see a *lavanderia* and the streets are lined with signs that boast about the best *taqueria* in town. At this moment, I teach only students of color. Last year, about 75% of students were of Hispanic or Latino heritage while about 24% was of Black or African American heritage. The other 1% consisted of White, Non-reported, and other ethnicities (EdData Education Data Partnership, "Census Day Enrollment by Ethnicity," 2019). The aforementioned demographics create a unique blend of languages, cultures, expectations, and interactions in our school from the moment our students step onto campus.

The diversity in experiences and backgrounds of my students is the best part of my job—every day I learn something new. Instead of learning new science content, as they do, I learn about a new food or a new word in a language I did not know, or even that a student of mine has recently taken on a job afterschool to support their family. Upon learning that I never tried Honduran food one day, one of my students who rarely ever decides to share in class told me he would bring

me some homemade Honduran food from his family. Another student shared with me the struggles he faces of having an open case with the Department of Child and Family Services (DCFS), and how he is not sure how he can focus in school with it still going on. A diverse population of students creates a spectacularly different set of periods within just a single day.

We include our Emergent Bilingual (EB) Students, formerly known as English Language Learners, in our general classes as well as certain Special Education students. EB students, make up about 30% of our student population; the majority of our students have been reclassified as English speakers, meaning they passed an exam of English proficiency (EdData Education Data Partnership, "English Learners," 2019).

I want to embrace the diversity of my school site by focusing my inquiry on the diversity of my students. Within my three biology classes, I see about 25 to 30 students in each period, ranging from 14-year-old freshmen to seniors, one of whom is 19 years old. In this space, I also teach approximately 12 EB students per period. A majority of my EB students' home language is Spanish, but I do have two students who speak Haitian Creole. As Salazar (2013) explains, a teacher can best support her students by, "Acknowledging and using students' heritage languages, and accessing their background knowledge, [which] make good pedagogical sense and constitute a humanizing pedagogy for students" (p. 134). Very early in the academic year, I realized that I need to create a space where all levels of students—from my Emergent Bilingual students to my seniors who are retaking the course can feel engaged and supported. I want to encourage my students to expand their zones of proximal development as Vygotsky theorized, by using the experiences of their peers in order to further engage in their own academic careers (Vygotsky, 1930).

As Moll (1998) describes in a keynote address regarding the concept of funds of knowledge, "We claim that by focusing on understanding the particulars, the practices of life (*los que haces de la vida*), we gain a deep appreciation of how people use resources of all kinds, most prominently their funds of knowledge, to cope with life" (p. 4). Teachers can gain perspective and beneficial information by examining the whole child, including their family, household, and cultural history, which can then be used to inform instruction. This instruction is therefore more powerful and effective to the student, as their lives are being validated in their education instead of being pushed aside by mainstream, stereotypical narratives.

This year, I aim to find and use these funds of knowledge, defined as "those historically accumulated, culturally developed, and socially distributed bodies of knowledge and skills essential for household or individual functioning and well-being" in my classroom to enhance the education experience of my multicultural and multidimensional students (Moll, 1998, p. 5). I also believe that

this is the first step in understanding what my students need in order to succeed in high school and further education.

I have seen the failure of transmission of knowledge from the teacher to the student in the classroom both as a student and now as a teacher. While standing at the board, lecturing about the phases of mitosis, I noticed multiple students' heads beginning to droop, their eyes struggling to stay open. As Rogoff explains, "In a community-of-learners' classroom, organization changes from dyadic relationships between teachers responsible for filling students up with knowledge and students who are supposed to be willing receptacles to complex group relations among class members who learn to take responsibility for their contribution to their own learning and to the group's functioning" (p. 214). After multiple attempts of teaching my students from the front of the classroom, lecturing concept after concept, and with my newfound understanding of my students' backgrounds, I accepted that this traditional method would not work for my diverse classroom.

In Vygotsky's (1930) work, he examines the benefits of students learning from their peers, instead of adults who are disseminating information to the students. In doing so, I want to create a classroom culture of student experts who can help just as much as I could throughout a lesson by accessing their own funds of knowledge in order to expand others' zones of proximal development. In addition, I want to explore the implications of the student discourse that can be produced by students who feel comfortable sharing with each other, specifically using interthinking methodology within EB and non-EB students (Littleton & Mercer, 2013).

By implementing the aforementioned concepts and strategies in my classroom, I hope to explore the following inquiry questions:

- How might efforts to establish a community-of-learners affect frequency of student discourse (both oral and written) and understanding of science content?
- Furthermore, how might the results of these efforts differ within the Emergent Bilingual and Non-Emergent Bilingual student populations?

Methods

My exploration of student discourse in a diverse, Community-of-Learners Classroom took on an auto-ethnographic inquiry stance. The lens of an inquiry project is unique in that it allowed me to explore how the theories I spent years reading and writing about actually followed through in the classroom through observation. I was able to implement my action plan and curriculum while utilizing surveys and student reflections to observe any effects in my students'

sense of community. The inquiry stance allowed me to simultaneously become an active insider and a distant observer of my classroom. Additionally, the auto-ethnographic approach allowed for continuous self-reflection in my own experience as both a student and a teacher.

My original action plan, as seen in Appendix B, details the content topics, teaching goals, relevant theories, and data collection methods that were implemented in all three of my biology classes. The classes focused broadly on genetics throughout the course of my inquiry, specifically exploring mitosis and meiosis, along with variations within these processes. However, due to the COVID-19 pandemic that began in early March of 2020, we were unable to complete the "Case Studies" section of the action plan.

In addition to the lessons that are detailed in Appendix B, students were introduced to physical changes in classroom structure to continue creating a community of learners and initiate student discourse, such as heterogeneous seating groups (mixing all level of EB and non-EB students), scientist partners (talking partners of the students' choosing), and reinforcing techniques like Think-Pair-Share (TPS).

I utilized whole-class surveys, exit tickets, written reflections, independent field notes to document my own thoughts, and focus groups in addition to the whole-class data to learn more about emerging discourse patterns in all three classes. The Student Discourse Survey, found in English and Spanish in Appendix A, was a weekly whole-class survey that students completed throughout the inquiry. It was important to gauge student opinions throughout my process as teacher driven explorations can be very impactful to the current students if their voices are heard throughout all stages of the inquiry, from planning to implementation to analysis (Pelton, 2010). My field notes acted as a daily journal space where I could document instances of student breakthroughs or obstacles throughout the inquiry process, as seen in a field note excerpt in Appendix B. I also incorporated a community circle to engage in focus group discussions as my school site already utilized this unique practice. I used this chance to ask students more emotional or personal questions that they may not take as seriously if it were on an exit ticket, as seen in the circle guide script in Appendix A.

For data analysis, students were grouped as an Emergent Bilingual (EB) student or a Non-Emergent Bilingual (Non-EB) Student. The EB student group consisted of all students who were in an English Language Development program in our school, while the Non-EB student group consisted of students who were either reclassified as English Proficient or were never in an English Language Development program to begin with. The specific phrasing of my surveys corresponded to Likert-Type data which connects the selection of a certain qualitative phrase such as, "somewhat confident" to a number, in this case the

number 3. Within each question, the responses corresponded to a value of 1, 2, 3, 4, or 5. As suggested by various literature, I utilized modes, medians, and frequencies instead of averages when examining the tendencies and variabilities of Likert-Type data to create an understanding of the general patterns in my classroom (Boone, 2012). Each response to the Student Discourse Survey was transcribed into a document for in-depth analysis between the baseline data from before the inquiry began to the consecutive weeks during which the aforementioned inquiry procedures were implemented. Each week's responses were also separated by group, EB versus Non-EB, in order to observe differences between the two groups. Many of these analyses were converted into graphs and are included in the findings section below.

As the surveys and reflections also included free-written responses, I relied on coding my data into categories in order to make meaningful connections between my students' diverse responses (Stuckey, 2015). Coding is utilized to create categories from a wide variety of data; for example, a student's response of, "I don't share out loud because I'm afraid of being judged as stupid or dumb," would be coded as "peer judgement." Any student response that mentioned judgement from peers was also categorized with the same code. After I identified specific codes within each student response, I formed more general categories by grouping related codes and their corresponding student responses, ultimately forming two main themes that summarized my findings: Familiarity and Collaboration (Saldaña, 2013).

Findings

Although the in-person school year was unexpectedly shortened, I was able to implement some key parts of my action plan, such as the introduction to the content of genetics as well as a deeper look into meiosis. I was not, however, able to implement the case studies that I would have hoped to use in order to incorporate the following findings into my current practice and to further explore the implications within written discourse. From these preliminary perspectives, I learned that a classroom environment that can foster collaboration through familiarity, and stray away from judgements, is one that will promote authentic, productive, and academic discourse.

Theme 1: Familiarity—"What makes me want to share in class is when I'm like, 'Oh this topic is easy, I know I nailed this, I got it. Badabing-badaboom. Done.'" As I sorted through the mountain of paper surveys I had collected over the weeks, there was one word that I saw repeatedly; "confidence." On an individual level, students shared that there was a connection between

feeling confident in their thought process and their willingness to participate in discourse, namely their willingness to verbally share their thoughts with others, from responses during the community circle. On a whole-class level, students generally participated in verbal discourse only when they personally knew who they were interacting with.

Familiarity within course content. Across my classroom, there was a distinct connection between understanding of the course material and their ability to participate actively in academic discourse. When asked about the possible connection between content understanding and participation in discourse, both EB and non-EB students acknowledged a similar pattern of participating more easily when the content was understood well. Additional student responses are included in Appendix C, Table 2. The challenge I wanted to acknowledge was creating a classroom environment in which all students feel comfortable to participate in discourse regardless of their confidence in their response or their personality traits. This is where peer relationships come into play.

Familiarity within the classroom community. Through the routine practice of independent notebook entries, student-chosen scientist partners, heterogeneous group seating, and whole class discussions, my students and I have explored a variety of discourse opportunities together. In the classroom, our practice has resulted in improvement, as many students self-identified development in their biology discourse skills. Such as one initially quiet EB student who said, "I think it has gotten easier now that I am used to talking most of the time." In addition to my deliberate continual practice and varied opportunities for discourse, students self-identified peer relationships and teacher actions as factors that affected their ability to engage in both written and verbal academic discourse. Many of the frequent responses I received about these peer interactions are included in Appendix C, Table 2. Although the student responses acknowledge that this is a difficult process, they also speak of the positive improvements they have noticed due to the new relationships they have been able to create in the classroom saying that group work, and sharing in general, has become easier. These responses summarize my motivation in wanting to research this topic further and emphasize that each student brings their own funds of knowledge, including linguistic capital, that can improve upon the classroom environment (Moll et al., 1992).

The relationship between student experiences and their willingness to participate in discourse can feel uncontrollable at times. Students indicated they would be willing to share if called upon, but would not want to voluntarily share. When should a teacher decide to push this student to participate more and when is

it better to let them decide to share on their own? It feels as if doing all the "right" things to set up a positive classroom environment and prompt discussions and still resulted in silence and blank stares. Although I refrain from traditional teaching methods like lectures and transmission of knowledge from teacher to students, I am reminded that what I say and how I say it can be interpreted uniquely by each of the thirty students sitting before me. One "objective" statement, in my eyes, can actually result in thirty different interpretations. Littleton and Mercer (2013) explain this phenomenon: "Language's power as a 'cultural tool' for pursuing creative, collective thinking partly lies in the possibility that listeners may each interpret a speaker's words in rather different ways, depending upon the personal perspective and background knowledge they bring to the conversation" (p. 8). On my worst days in the classroom, this perspective can sometimes diminish my drive to create yet another opportunity for discourse in my classroom when it has failed so miserably before. However, more frequently, I am reminded by this fact to take advantage of these differing understandings and draw them out in a more conversational manner. Even if students share things that may be factually incorrect, the practice of participating in the discourse, using the academic language, and troubleshooting their response together can be more of a learning experience than one person sharing the right answer every time.

Although many of my EB students expressed apprehension towards sharing with the whole class, they did identify a small positive shift in their confidence levels when speaking individually with a Non-EB student. During the Student Discourse Survey, students were asked to rate their confidence levels on a scale of 1 through 5 when sharing their responses verbally with someone who does not speak their preferred language. The results of this survey question can be seen in Figure 1, which depicts the median values for Week 1 compared to Week 5 of the survey implementation.

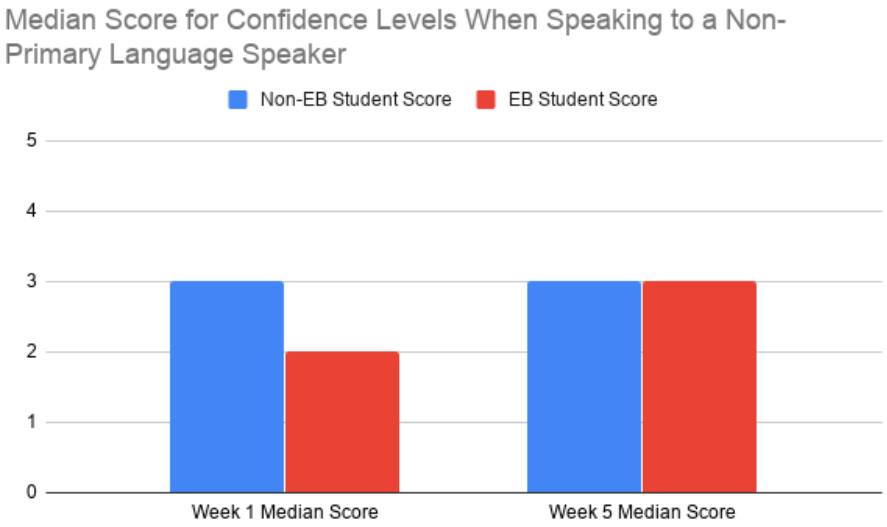

Figure 1. Median scores for confidence levels when speaking to a non-primary language speaker.
Note. The student response pool did not consist of exactly the same students nor the same number of students due to absences on the day of survey implementation. EB refers to Emergent Bilingual students and Non-EB refers to any student who is not currently an Emergent Bilingual, including Reclassified Fluent English Proficient (RFEP) students.

Although the student pool may differ slightly from the Week 1 to Week 5 results, there was an improvement of median scores from 2 (developing confidence) to 3 (somewhat confident) in the responses from EB students. The Non-EB students' median score remained the same at 3 (somewhat confident), bringing the EB and Non-EB students to an equal level of confidence when speaking with each other. What had specifically changed within the EB students to increase their confidence levels? Furthermore, why did the Non-EB students' confidence not improve if their peers' confidence was improving. Was something in the classroom working better for EB students? In the future, I would like to explore the causes of this change and continue to analyze any shifts that occur.

On the last day of school before school closures began due to Coronavirus, I put together a voluntary Student Discourse Community Circle at lunch. To my surprise, several students attended, and I was able to have representation from each of my Biology classes. During this circle, we broke down the more personal reasons for wanting to participate in discourse in my classroom, as seen in Appendix C, Table 3, focusing on the classroom environment and my actions specifically.

I have often observed the negative effect of judgements on a student's confidence to participate in discourse, not only throughout this inquiry, but also in my own schooling experience. This is why I always aspired to be a teacher who understood the whole student, not just how often they spoke in class. Rogoff (1994) explains the role of teachers as adults who "are supportive and provide leadership, rather than controlling all interactions in the classroom" (p. 214). I always try to lead by example in my classroom, especially when it comes to speaking out about negative student interactions, since I have experienced the lasting detrimental consequences they can have on one's confidence. I remember that I always appreciated my friends who would stand up for my name, even when I did not have the energy to do so. I wonder what it would have been like to hear a teacher do the same. In their community circle responses, students identify the positive effects that a teacher's actions can play in generating multiple efforts from all members of the classroom to engage in discourse. Additionally, Rogoff (1994) emphasizes that "the instructional discourse in a community-of-learners classroom is conversational rather than using the traditional question-response-evaluation format," which I believe prompts more student learning due to their continual efforts that are encouraged by the positive classroom (p. 214). Specifically, by focusing on thought processes instead of always being correct, as well as immediately shutting down judgmental comments, I am able to contribute to a positive classroom culture. My students' experience is paralleled in my own experience with this inquiry. When an individual can explore multiple opportunities non-judgmentally and with a growth mindset, they can expand past their preconceived expectations, whether it be in their teaching or their learning.

Theme 2: Collaboration—"What motivates me to share my answers with my partner is that it builds a communication and a relationship and trust between us." The ability to engage in productive academic discourse flourishes within the context of genuine peer-to-peer and student-teacher relationships. After exploring the effects of creating a positive classroom environment, I then wanted to analyze how this might affect the various ways students participate in discourse in my classroom. In the Student Discourse Survey included in Appendix A, I asked students to select which form of discourse they enjoyed the most. The results of this question can be seen in Figure 2.

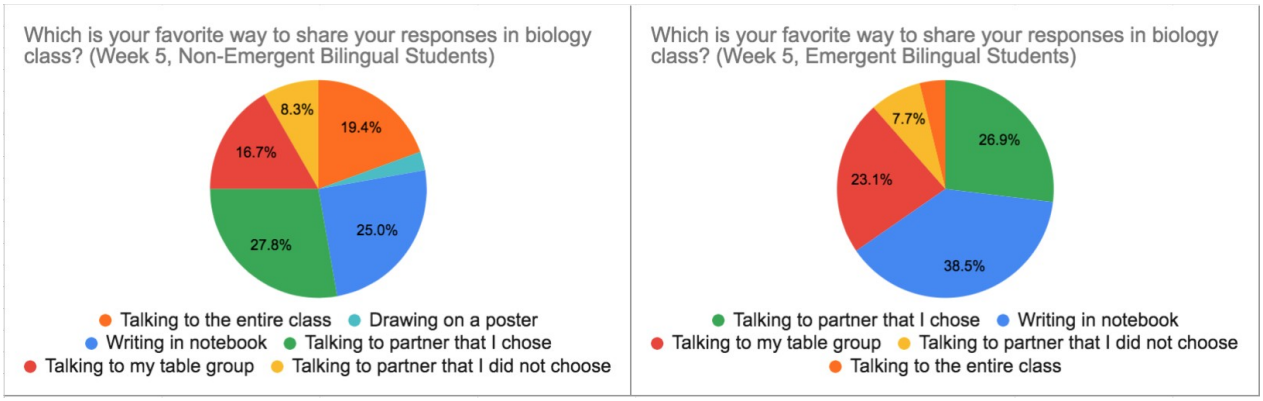

Figure 2. Preferred method of student discourse.
Note. Non-EB student responses on the left, EB student responses on the right. The yellow section labeled "Talking to partner that I did not choose" refers to speaking with their "elbow partner" in class. This is the student they currently sit next to.

Overall, the most common responses for all my students were that they preferred either talking to a partner that they chose, or they preferred writing in their notebook. This was not necessarily surprising to me, but I wondered even more now how these preferences came to be. My EB students overwhelmingly prefer writing in their notebook, as about 40% of the students who participated in the survey voted for this option. A large discrepancy between my EB students' responses and my Non-EB students' is in regards to sharing verbally with the entire class. For this option, about 20% of Non-EB students, compared to only 4% of EB students, identified it as their preferred way of participating in discourse. After selecting their preferred method, students were then asked to write an explanation to justify their selection as seen in Appendix C, Table 5.

According to these responses, the act of sharing knowledge verbally in order to gain validation or further knowledge from classmates motivates both EB and Non-EB students. I believe my students understand the importance of expanding our own knowledge by accessing others' funds of knowledge because of these students' justifications. Furthermore, some students explicitly say that they prefer to share with the entire class to share their knowledge with other students. It is important to expand their zones of proximal development which is best done by peers working with each other to push the boundaries of their knowledge (Vygotsky, 1930). Students did mention some fears about sharing out loud with the class in their written reflections, such as "I can get made fun of if I get it wrong," or "People will laugh at me if I'm wrong" (Student Discourse Survey Responses, 2020). This makes me wonder, how can I combine these two opposing mentalities, one stemmed from confidence and the other from fear, in my classroom to promote more academic discourse?

As seen in Figure 2, “Writing in my notebook” is the most popular choice from my EB students, who believe writing in their notebook allows students to express themselves judgement free. The additional responses in Appendix C, Table 5 show that Non-EB students feel the same way about their preference for writing rather than sharing aloud to the class. Throughout the course of this inquiry, I was unfortunately unable to implement a formal written assessment due to the sudden school closures which resulted in a drastic change to my curriculum planning. Something I would be curious to examine in the future is how students might perform on a written assessment in which they have time to work independently and then collaborate with other students in order to develop their answers. Furthermore, I am curious how students might benefit from peer editing sessions of these written responses with a variety of students, both EB and Non-EB. In the future, I would also want to introduce more scaffolds into my classroom that would be normalized for all students to use regardless of their EB classification. These scaffolds might include printed sentence starters on every table and worksheets encompassing common science phrases to glue into student notebooks.

The theme of collaboration is perpetuated in responses from Appendix C, Table 8 as students understand that more can be accomplished when students come together. As Littleton and Mercer (2013) describe, “In using language to make joint sense of their experience, two people may create a new kind of understanding that neither could have achieved alone” (p. 9). This new understanding can further promote discourse and progress, especially in science, because the power of collaboration is invaluable to new discoveries. Students shared that they often do not want to share with a partner they do not know because their answer could “sound stupid, or it’s not what [their] partner was thinking” (Student Discourse Survey Responses, 2020). This is further exemplified by a student’s response that trust is imperative in choosing someone to share with. Using this information, I want to continue to create a positive classroom environment, not just in the beginning of a new semester, but throughout the school year. I believe by implementing weekly activities and routines, the importance of a positive classroom environment can be emphasized to every student. This is why we sat in groups from the first day of school, played team-building games, maintained heterogeneous seating, and used table points throughout the year.

During our last-minute community circle before school closures, we discussed the importance and possible uses of heterogeneous seating. Although I attempted to create a diverse seating chart in every period, this was not always the case in reality. For this reason, I only had about one or two heterogeneous groups in each period. The following discussion was transcribed from the community

circle upon asking the question, “How does it feel when someone shares in another language?”

> **Student:** When other people talk in another language, I feel comfortable because Spanish was my first language. It took me 2 years to learn English. And I know how other people feel when they don’t know the language, they feel, um, confused.
>
> **Me:** So, what do you think we can do to help better that as a class?
>
> **Student:** At least put one English and Spanish speaker at each table, so like, if there are 2 Spanish kids at one table, they ask the one that speaks both languages for help.
>
> **Me:** And would you be comfortable being one of those people I can count on?
>
> **Student:** Yeah. (Field Notes, March 13, 2020)

I was comforted by the student suggesting this idea of heterogeneous seating himself, and it reminded me that when students buy into a certain concept, they are willing to participate in it. Since this student had experienced the transition himself, he was more than willing to help other students who needed it. Rogoff (1994) explains that a community-of-learners classroom is a “community working together with all serving as resources to the others, with varying roles according to their understanding of the activity at hand and differing responsibilities in the system” (p. 214). By using the variety of skills that each student brings to the table and specifically identifying roles, the group can grow more in every aspect of their school experience, including their ability to produce academic discourse.

Further Explorations and Implications

Before I can accept and implement my learnings, I must acknowledge the maturation effect. The maturation effect in this case suggests that with the passing of more time, people will naturally become more acquainted to their surroundings and grow more comfortable (Kirk et al., 2011). This may affect students’ ability to participate in discourse overtime because they may become more accustomed to their peers and therefore more willing to share with them. However, even six months into the school year, I was astonished to see how little my students knew about each other, starting with their names. Even with deliberate name-learning games and activities at the beginning of each semester, in August and January, it was not enough for students to confidently identify each other. After a three-day

weekend in February, we had a community circle in class to reground ourselves in our classroom community because I sensed that the long winter break had created a feeling of unfamiliarity. At the end of the circle, the exit ticket task was to take two minutes to write as many of their classmates' names onto an index card. I was surprised to see no more than 5 names on each card, even though we had spent time introducing ourselves again in the circle (Field Notes, 2020, February 19). These results further supported my motivation to explore the significance of creating a positive classroom culture, especially regarding how to stay consistent with routines that can reinforce the importance of personal identity and culture. Salazar (2013) emphasizes the importance of acknowledging cultural knowledge: "We discovered that strong relationships with adults and peers that are grounded in students' cultural funds of knowledge influence students' academic resiliency through the construction of a strong academic identity, or scholar ethos" (p. 129).

From my inquiry process, I believe that seemingly small changes to my everyday classroom routines could create lasting impacts on the classroom community. Furthermore, I want to challenge myself and my students to examine the concepts of self and peer judgement throughout our learning experiences. This could be done through activities like "I Am From" poems, where students access their funds of knowledge (Moll et al., 1992) to create a poem indicative of their self-identity, or even an "Inside Me versus Outside Me" activity in which students would examine how they think of themselves in relation to how they believe others think of them. After these introspective activities, it would be interesting to observe the conversations students might engage in once they have learned more meaningful facts about their peers.

This year, I dedicated many lessons to debunk the theory that there is only one right answer in science class. I attempted to do this through leading by example and talking through "wrong" answers by instead highlighting important parts of the student's thought process. My goal was to ultimately encourage discourse by disintegrating the fear of being wrong. In the upcoming years, I want to embrace science as a multifaceted subject in order to encourage students to construct predictions, hypotheses, conjectures, and even theories. Now that I better understand how to start student discussions, I hope to hear more voices as we all become more comfortable making mistakes and learning from them.

Reflecting on the Autoethnographic Inquiry Approach

Within an inquiry, the pressure of a wrong or right answer is essentially removed. I was not trying to create a break though in the field of education in one academic year, I was merely trying to explore how the theories I had spent years reading and writing about actually followed through in the classroom. What

aspects of each theory were actually possible to implement in the classroom as a first-year teacher? Which ones were more difficult, or even unattainable? By tying in our extensive theoretical research, my experience being a full-time teacher became a science experiment in of itself. I wanted to find out what would actually work for my classroom, and often times, the answer to that question changed as each period brought together a different mix of students.

I initially wanted to be a teacher who taught the whole child and I always acknowledged that this was a lot easier said than done. What I had not considered, however, was that the relationships I built were often seamlessly initiated, whether it was through a quick check in with a student in the hallway, or just opening my door at lunch. So much of the relationship building occurred outside of the classroom, but the results inside of the classroom were boundless. I started going to my student's basketball games, chaperoning the homecoming dance, and eventually signed off to be an advisor for a student club, all because I understood that these opportunities were imperative to building relationships with students. I acknowledged that my favorite teachers were the ones who saw me as more than just one type of person, and towards the end of this shortened academic year, I was seeing my students in the same light. Some students were also athletes, others were champion video game players, a few were nail technicians, and all of my students were resilient, flourishing, and hopeful human beings.

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Appendix A: Student Surveys and Community Circle Guide

Student Discourse Survey (English)

Question:	**Your Response: Please circle the option that most accurately describes your situation in Ms. Ghosh's biology class only. Please answer honestly, as there are no wrong or right answers.**				
How **OFTEN** do you share your responses **verbally** to the whole class in biology? (For example: raising your hand to answer a question)	Never (I do not share with the whole class in biology class)	Rarely (I share to the whole class once a **week** in biology class)	Sometimes (I share to the whole class at least twice a **week** in biology class)	Often (I share to the whole class once **every class period** in biology class)	Very Often (I share to the whole class multiple times **every class period** in biology class)
Which is your favorite way to share your responses in biology class? Please circle one.	Writing in my notebook (individual writing)	Talking to a partner that I choose (for example: scientist partners)	Talking to my elbow partner (the person who sits next to you)	Talking to my table group	Talking to the entire class (for example: raising your hand to answer a question)	Drawing on a poster (for example: a poster for a gallery walk)
Please explain your selection for the previous question. **Why is your selection your favorite way of sharing your responses?**	Explain here:				
How **OFTEN** do you share your responses **verbally** with someone who does not speak your preferred language in biology class?	Never (I do not share with anyone who does not speak my preferred language)	Rarely (I share to someone who does not speak my preferred language once a **week** in biology class)	Sometimes (I share to someone who does not speak my preferred language at least twice a **week** in biology class)	Often (I share to someone who does not speak my preferred language once **every class period** in biology class)	Very Often (I share to someone who does not speak my preferred language multiple times **every class period** in biology class)
How *CONFIDENT* do you feel	Not confident	Developing confidence	Somewhat confident	Confident	Very confident I can share on the

sharing your responses **verbally** in your preferred language to one of your **SCIENTIST PARTNERS** in biology class?	I do not feel comfortable sharing regardless of the preparation or practice beforehand.	I can share if I **write** my answer **and** have Ms. Ghosh check it before I practice to speak.	I can share as long as I have time to **write** my answer out and practice before speaking.	I can share as long as I have time to **think** of my answer to practice before speaking. (no writing before speaking needed)	spot, without any practice.
How *CONFIDENT* do you feel sharing your responses **verbally** in your preferred language to your **TABLE GROUP** in biology class?	Not confident I do not feel comfortable sharing regardless of the preparation or practice beforehand.	Developing confidence I can share if I **write** my answer **and** have Ms. Ghosh check it before I practice to speak.	Somewhat confident I can share as long as I have time to **write** my answer out and practice before speaking.	Confident I can share as long as I have time to **think** of my answer to practice before speaking. (no writing before speaking needed)	Very confident I can share on the spot, without any practice.
How *CONFIDENT* do you feel sharing your responses **verbally** in your preferred language to the **WHOLE CLASS** in biology class?	Not confident I do not feel comfortable sharing regardless of the preparation or practice beforehand.	Developing confidence I can share if I **write** my answer **and** have Ms. Ghosh check it before I practice to speak.	Somewhat confident I can share as long as I have time to **write** my answer out and practice before speaking.	Confident I can share as long as I have time to **think** of my answer to practice before speaking. (no writing before speaking needed)	Very confident I can share on the spot, without any practice.
How *CONFIDENT* do you feel sharing your responses **verbally** with someone who does not speak your preferred language in biology class?	Not confident I do not feel comfortable sharing with someone who does not speak my preferred language.	Developing confidence I can share a few words with someone who does not speak my preferred language.	Somewhat confident I can share a complete sentence with someone who does not speak my preferred language.	Confident I can share my ideas partially with someone who does not speak my preferred language.	Very confident I feel comfortable engaging in a conversation with someone who does not speak my preferred language.

Student Discourse Survey (Spanish)

Pregunta:	**Su respuesta: Por favor marque con un círculo la opción que describa con mayor precisión su situación en la clase de biología de la Profesora Ghosh. Por favor responda honestamente, ya que no hay respuestas incorrectas o correctas.**				
¿Con qué **<u>frecuencia</u>** comparte sus respuestas **verbalmente** con toda la clase de biología? (Por ejemplo: levantar la mano para responder una pregunta)	**Nunca** (no comparto con toda la clase en la clase de biología)	**Raramente** (comparto con toda la clase una vez por **semana** en la clase de biología)	**A veces** (comparto con toda la clase en al menos dos veces por **semana** en la clase de biología)	**A menudo** (comparto con toda la clase una vez **cada período de clase** en la clase de biología)	**Muy a menudo** (comparto con toda la clase varias veces **cada período de clase** en la clase de biología)

¿Cuál es su forma favorita de compartir su respuestas en clase de biología? Por favor circule uno.	**Escribir en mi cuaderno** (escritura individual)	**Hablar con un compañero que EBijo** (por ejemplo: socios científicos)	**Hablar con mi compañero de codo** (la persona que se sienta a tu lado)	**Hablar con mi grupo de mesa**	**Hablar con toda la clase** (por ejemplo: levantar la mano para responder una pregunta)	**Dibujar en un cartel** (por ejemplo: un cartEB para una caminata por la galería)

Explique su selección para la pregunta anterior. **¿Por qué es su selección su forma favorita de compartir sus respuestas?**	Explique aquí:

¿Con qué **<u>frecuencia</u>** comparte sus respuestas **verbalmente** con alguien que	**Nunca** (no comparto con nadie que no hable mi idioma	**Raramente** (comparto con alguien que no habla mi idioma	**A veces** (comparto con alguien	**A menudo** (comparto con alguien que no habla mi	**Muy a menudo** (compart o con

no habla su idioma preferido en la clase de biología?	preferido)	preferido una vez por **semana** en la clase de biología)	que no habla mi idioma preferido en al menos dos veces por **semana** en la clase de biología)	idioma preferido una vez **cada período de clase** en la clase de biología)	alguien que no habla mi idioma preferido varias veces **cada período de clase** en biología clase)
¿Que tan *SEGURO* se siente al compartir sus respuestas **verbalmente** en su idioma preferido con uno de sus **SOCIOS CIENTÍFICOS** en la clase de biología?	**No estoy seguro** No me siento cómodo compartiendo independientemente de la preparación o práctica previa.	**Desarrollando seguridad** Puedo compartir si **escribo** mi respuesta **y** si la Profesora Ghosh la revisa antes de practicar para hablar.	**Con cierta seguridad** Puedo compartir siempre que tenga tiempo para **escribir** mi respuesta y practicar antes de hablar.	**Seguro** Puedo compartir siempre que tenga tiempo para **pensar** en mi respuesta para practicar antes de hablar. (no es necesario escribir antes de hablar)	**Muy seguro** Puedo compartir en el acto, sin ninguna práctica.
¿Que tan *SEGURO* se siente al compartir sus respuestas **verbalmente** en su idioma preferido con su **GRUPO DE MESA** en la clase de biología?	**No estoy seguro** No me siento cómodo compartiendo independientemente de la preparación o práctica previa.	**Desarrollando seguridad** Puedo compartir si **escribo** mi respuesta **y** si la Profesora Ghosh la revisa antes de practicar para hablar.	**Con cierta seguridad** Puedo compartir siempre que tenga tiempo para **escribir** mi respuesta y practicar antes de hablar.	**Seguro** Puedo compartir siempre que tenga tiempo para **pensar** en mi respuesta para practicar antes de hablar. (no es necesario escribir antes de hablar)	**Muy seguro** Puedo compartir en el acto, sin ninguna práctica.
¿Que tan *SEGURO* se siente al	**No estoy seguro**	**Desarrollando seguridad**	**Con cierta segurida**	**Seguro**	**Muy seguro**

compartir sus respuestas **verbalmente** en su idioma preferido con **TODA LA CLASE** en la clase de biología?	No me siento cómodo compartiendo independientemente de la preparación o práctica previa.	Puedo compartir si **escribo** mi respuesta **y** si la Profesora Ghosh la revisa antes de practicar para hablar.	**d** Puedo compartir siempre que tenga tiempo para **escribir** mi respuesta y practicar antes de hablar.	Puedo compartir siempre que tenga tiempo para **pensar** en mi respuesta para practicar antes de hablar. (no es necesario escribir antes de hablar)	Puedo compartir en el acto, sin ninguna práctica.
¿Que tan *SEGURO* se siente al compartir sus respuestas **verbalmente** con alguien que no habla su idioma preferido en la clase de biología?	**No estoy seguro** No me siento cómodo compartiendo con alguien que no habla mi idioma preferido.	**Desarrollando seguridad** Puedo compartir algunas palabras con alguien que no habla mi idioma preferido.	**Con cierta segurida d** Puedo compartir una oración completa con alguien que no hable mi idioma preferido	**Seguro** Puedo compartir mis ideas parcialmente con alguien que no hable mi idioma preferido.	**Muy seguro** Me siento cómodo al conversar con alguien que no habla mi idioma preferido

Student Discourse Community Circle #1 Questions

Ghosh Community Circle

Please remember the circle guidelines:

1. *Respect the talking piece*
2. *Speak from the heart*
3. *Listen with your heart*
4. *Bring your best self*
5. *Say just enough without feeling rushed but concise*
6. *Honor privacy*

Thank you for being here today to participate in Ms. Ghosh's community circle! If you feel like you rather answer these questions in writing, that is perfectly fine. You can email Ms. Ghosh your responses at

Questions:

1. Would you say Ms. Ghosh has created a classroom environment that supports a **community of learners** that feels comfortable to share their thoughts? (A community of learners = a group of students who can support each other's learning journeys in various ways)
    1. If so, how did Ms. Ghosh do this? (ex: community circles, scientist partners, get to know you activities, daily dialogue from Ms. Ghosh, get to know you games, etc…)
    2. If not, how do you think Ms. Ghosh can improve on this?
2. What makes you want to share your ideas in class? What do you like sharing about?
   - Some things that Ms. Ghosh asks about include: the weekends, plans for breaks, life in general, and of course, biology content.
   - Think about a class that you like to share in (it doesn't have to be biology). What makes that class better to share in?

1. Do you feel like there is a connection between sharing your knowledge in class and how much you understand the topic? Please explain your answer.
2. What can Ms. Ghosh do to help you share more?
3. How does it feel when someone shares in a language you don't feel comfortable with?
   - What can we do as a community of learners to make this better/to change this?

Appendix B: Inquiry Action Plan and Field Notes Excerpt

***Table 1*. Biology Action Plan for Student Discourse Inquiry**

Topics and Dates of Implementation	Teaching Goals (Learning Outcomes)	Learning Tasks and Relevant Theories	Data Collection Approaches
Introduction to Mitosis and Meiosis Weeks 1 - 3: January 27 – February 14	<u>Content</u>: What is mitosis? Stages of Mitosis What is meiosis? <u>SEPs:</u> SEP 2: Using models SEP 8: Communicating information <u>Classroom community and discourse:</u> Group work in new seating chart Establishing scientist partners (talking partners)	1. Cell division vocabulary scaffolding 2. Mitosis stages cards (inferences) 3. Mitosis stages lab in groups 4. Microscope practice 5. Onion cell microscope lab (seeing the stages of mitosis) <u>Notable Theories:</u> Zone of Proximal Development (Vygotsky, 1930). Community of Learners (Rogoff, 1994).	<u>Whole class:</u> Student discourse survey #1, 2, and 3 (weekly) Written Reflection: Why is partner work important? <u>Independent:</u> Field notes Documentation of heterogeneous seating groups
Deep Dive into Meiosis Weeks 4 - 6: February 18 – March 6	<u>Content</u>: Stages of Meiosis When is mitosis important vs when is meiosis important? DNA is unique to each person DNA makes up our traits Meiosis leads to → variation in traits <u>SEPs:</u> SEP 3: Planning and carrying out an investigation SEP 4: Interpreting data SEP 6: Construct explanations SEP 7: Engage in argument based on	1. Meiosis vs mitosis notes 2. Meiosis gummy worm lab 3. Meiosis → traits practice with Punnett squares <u>Notable Theories:</u> Culturally Relevant Pedagogy (Ladson-Billings, 1995). Zone of Proximal Development (Vygotsky, 1930). Community of Learners (Rogoff, 1994).	<u>Whole class:</u> Student discourse survey #4 and 5 Exit ticket: Group roles and helping each other <u>Independent:</u> Field notes <u>Focus group:</u> Group circle: Ms. Ghosh's classroom culture and how it affects us.

	evidence <u>Classroom community and discourse</u>: Continued group work Use of deliberate group roles in which final product is not possible without each team member participating		
Case Studies: #1: DNA Fingerprinting and #2: Cancer Weeks 7 – 9: March 9 – March 27	<u>Content</u>: What causes variations in traits? What happens when these mechanisms go wrong? What are mutations? <u>SEPs:</u> SEP 1: Asking questions and defining problems SEP 4: Interpreting Data SEP 2: Use of models SEP 8: Communicating information <u>Classroom community and discourse</u>: Connection to own community through cancer exploration Discourse expanded to written/drawn discourse through PSA creation	1. Continued Punnett square practice 2. Blood types: Forensics lab 3. So what?: Group presentations on wrongful conviction cases 4. What causes cancer? Lesson, videos, and warm up engaging in student's prior knowledge of the topic 5. Mutations explored 6. Disparities in Cancer treatments/precautions in communities of color exploration 7. Creation of Cancer screening PSA's in groups (critical media literacy) <u>Notable Theories:</u> Culturally Relevant Pedagogy (Ladson-Billings, 1995). Interthinking (Littleton & Mercer, 2013). Zone of Proximal Development (Vygotsky, 1930). Community of Learners (Rogoff, 1994).	<u>Whole class:</u> Student discourse survey #6 and 7 Written Reflection: Group work <u>Independent:</u> Field notes Documentation of change in heterogeneous seating groups <u>Focus group:</u> Group circle: **Creating** media with a partner

Appendix C: Student Survey and Community Circle Responses

Note for all of the following tables. Spanish responses were translated into English.

[a]EB classification pertains to any student who is currently an Emergent Bilingual and Non-EB classification pertains to any student who is not currently an Emergent Bilingual, including Reclassified Fluent English Proficient (RFEP) Students.

***Table 2*. Student Survey Responses Regarding Content Understanding and Participation in Discourse**

Student	English Language Learner Classification[a]	Student Response
Student 1	EB	Because if you understand the topic, there is supposed to be no problem in sharing it to the class. But there are some shy people who cannot do that.
Student 2	EB	Feeling confident about my answer makes me sure of it and motivates me to share.
Student 3	Non-EB	Something that motivates me to share is easy questions because I know I won't mess up and make a fool of myself.
Student 4	Non-EB	Sometimes I don't know stuff but I still try to share, you know, just to put what I think could be right, out there.
Student 5	Non-EB	What makes me want to share in class is when I'm like, 'Oh this topic is easy, I know I nailed this, I got it. Badabing-badaboom. Done.

Table 3. **Written Reflection Student Responses: Opinions on Peer-to-Peer Interactions**

Student	English Language Learner Classification[a]	Student Response
Student 6	EB	I feel more confident with what I talk about when I select my partner.
Student 7	EB	I feel confident with friends and it is in my own language. I don't like to share with someone who I do not know.
Student 8	EB	I do not share because I do not think my answer is good, I do not know the person, or I do not know their language.
Student 9	EB	I think that we have to understand that not everybody speaks our same language, so do not judge if someone misspells something or things like that, they are trying their best.
Student 10	EB	They don't speak my language, so they don't understand me, so I don't share.
Student 11	Non-EB	When I share with someone that is not the same language as me, it is kind of difficult because I don't really know how to start a conversation with them if they don't know how to speak my language and I don't know how to speak their language. So, it's kind of hard.
Student 12	Non-EB	It is easy to talk to people you know.
Student 13	Non-EB	I feel a little better about sharing because I'm starting to get along with other people.
Student 14	Non-EB	Group work has gotten easier because I've kind of gotten to know these people. I feel more comfortable than before.
Student 15	Non-EB	When other people are trying, that makes me want to try.
Student 16	Non-EB	I have no problem sharing if I'm called on, but I won't volunteer.

***Table 4*. Community Circle Student Responses: Ms. Ghosh's Actions to Create a Positive Classroom**

Student	English Language Learner Classification[a]	Student Response
Student 17	EB	What makes me want to share is that by doing it I feel a better connection between the class, Ms. Ghosh and I.
Student 18	EB	I feel like for a lot of people it's kind of stressful answering, especially like people getting scared of criticism. But I don't think that's what we get here. We get to grow more. And I'm really grateful that [Ms. Ghosh] explains it to us because, like, I might be confident answering even if I'm wrong, like I get to learn something here which I am happy about.
Student 19	Non-EB	[Ms. Ghosh] doesn't tolerate it when other students put others down when they share something they might not appreciate.
Student 20	Non-EB	I think Ms. Ghosh has created a really nice classroom environment because when we share an answer, even if we're wrong, she doesn't put us down like she explains it to us or she says we're on the right track.
Student 21	Non-EB	I have met teachers where if you get it wrong, they criticize you, they tell you a bunch of stuff and they automatically drop your grade. But Ms. Ghosh tries to help you to understand things that you might not get.
Student 22	Non-EB	I guess like [Ms. Ghosh] knows if you're not feeling right that day, you're not feeling like the happiest in the moment, she gives you a break.
Student 23	Non-EB	It's not that I don't share because I'm uncomfortable, it's because I just don't really want to talk. But I do it for [Ms. Ghosh].

***Table 5*. Student Survey Justifications—Sharing with the Entire Class**

Student	English Language Learner Classification[a]	Student Response
Student 24	EB	My peers realize the ideas I have.
Student 25	EB	I like to share to see if my response is okay or if it needs to be corrected.
Student 26	Non-EB	Because I feel like I am heard.
Student 27	Non-EB	I chose this because I enjoy conversation with those who want to communicate and share opinions. I enjoy debates, conversations opinions, and explanations.
Student 28	Non-EB	I like being able to ask Ms. Ghosh questions on my opinion and also learn my peer's opinions to see how they influence mine.
Student 29	Non-EB	If you share, you can get feedback, or you can kind of build on someone else's previous statement that perhaps they didn't finish it, but you know something, so you add onto it.
Student 30	Non-EB	I know it and I'm going to help others learn.
Student 31	Non-EB	I'm motivated by spreading knowledge.

***Table 6*. Student Survey Justifications—Writing in Notebooks**

Student	English Language Learner Classification[a]	Student Response
Student 32	EB	When I write, I can say everything I want to say.
Student 33	EB	Nobody has to know what I wrote.
Student 34	Non-EB	I prefer sharing my responses this way [in writing] because I can't really be judged for my answers.
Student 35	Non-EB	What stops me from sharing aloud is being wrong and looking dumb, so I keep my answers to myself.

***Table 7*. Student Survey Justifications—Sharing with a Self-Selected Partner**

Student	English Language Learner Classification[a]	Student Response
Student 36	Non-EB	What motivates me to share my answers with my partner is that it builds a communication and a relationship and trust between us.
Student 37	EB	I like to share with my partner because they get to hear my opinion, and I get to hear theirs.
Student 38	EB	I feel better choosing the person because I can trust this person more.

***Table 8*. Student Justifications—Sharing within Table Groups**

Student	English Language Learner Classification[a]	Student Response
Student 39	EB	I like to work in my group because we all share our ideas.
Student 40	EB	It's my favorite because if I'm wrong they can help me to get the answer right next time.
Student 41	Non-EB	Maybe together we'll build up on some idea and make a better idea.