

Clemson University

**TigerPrints**

---

Publications

Eugene T. Moore School of Education

---

2014

## Creating Space: Pedagogical Choices to Encourage a Third Space in an Urban, Kindergarten Science Classroom

Cassie F. Quigley

*Clemson University, [cassieq@clemson.edu](mailto:cassieq@clemson.edu)*

Anna H. Hall

*Clemson University, [ah2@clemson.edu](mailto:ah2@clemson.edu)*

Follow this and additional works at: [https://tigerprints.clemson.edu/eugene\\_pubs](https://tigerprints.clemson.edu/eugene_pubs)



Part of the [Education Commons](#)

---

### Recommended Citation

Quigley, C. F. & Hall, A. H. (2014). Creating space: Pedagogical choices to encourage a third space in an urban, kindergarten science classroom. Presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

This Article is brought to you for free and open access by the Eugene T. Moore School of Education at TigerPrints. It has been accepted for inclusion in Publications by an authorized administrator of TigerPrints. For more information, please contact [kokeefe@clemson.edu](mailto:kokeefe@clemson.edu).

## Objectives and Purpose

“The butterfly is in the chrysalis stage,” Victory informed us as she pointed to the brown chrysalis in the jar on the lab bench, “It was an egg then it formed its chrysalis or pupa and then it will become a butterfly.” When we asked her how she would describe this to her friends, she remarked, “It is like when you go into the dressing room and put on a church dress- you act like someone different.” In this example, Victory, a kindergartener, was translating the scientific language taught to her in the science classroom into a language her friends would understand. Understanding marginalized students’ ability to translate scientific knowledge in a manner that acknowledges cultural and discursive identity is needed in science education (Brown, Ryoo, & Rodriguez, 2010; Lee, 2001).

Studies of discourse in science education reveal how science is framed, who gets to speak in regard to science, and how issues of language use encourage or hinder science learning. Yet, even as science is made available to students through appropriate discourse techniques, many of these studies find limited participation and achievement of students in regards to talking science (Alozie, Moje & Krajcik, 2009; Chin, 2006; Lee & Luky, 2007; Moje et al., 2004; Santau, et al., 2010). This demonstrates a continual problem for science education and a call for discourse studies in science education with attention on blending discourses between home and school. One such place is Third Space. Third Space is a place where students bring their home knowledge and discourses (first space) together with science knowledge and discourses (second space) to achieve educational equity while achieving access to the scientific discourse. Using the framework of Third Space theory, this paper examines the way one urban kindergarten teacher creates Third

Space moments in her classroom. The specific research question is: “How is congruent Third Space constructed by the teacher in this classroom?”

### Theoretical Framework- Third Space Theory

Third Space is used in a variety of fields (e.g. sociology, linguistics, mathematics) to describe the convergence of two spaces (Gutiérrez et al., 1999; Moje et al, 2001). In this study, we extend this notion to describe Third Space as a framework used for pedagogical practices for science education. Thus, throughout the paper we utilize Third Space as a theoretical space that combines the worlds of students (first space) with the worlds of school science (second space) to construct a Third Space. First space represents the space of home networks (i.e. home, community centers, church) and second space represents the space of school. Using this framework of congruent Third Space, the educational focus is shifted to include achievement and equity by creating a space that values instructional and everyday discourses to support but not compete with scientific discourse. In the opening narrative described above, Victory is *allowed* to demonstrate her scientific knowledge both through her description of the metamorphosis of a chrysalis to a butterfly, and through using non-academic, or everyday language (her funds of knowledge) and examples (putting on the “church dress” and acting “like someone different”) to demonstrate her understanding of the lifecycle process. According to this theory, these spaces are created when scientific, everyday, and instructional discourses are combined through authentic integration *by the student*. In Victory’s case, she integrated scientific understanding into her everyday discourse and used appropriate contextual examples to initiate her own meaning-making of academic knowledge. Moje et al. (2001) used this approach to guide their studies in science education by focusing the

discipline on science. Whereas these researchers focused on new language learners, our approach was to focus on scientific discourse as both a discipline and a language to be learned— how the teacher constructs these Third Space moments.

### Methods

This study employed qualitative methodology to answer the research question. Below we describe the teacher, students, data sources and collection techniques as well as the analysis procedures.

#### *Teacher*

Ms. Sanchez has taught kindergarten for 19 years in this school district and at this particular school since it opened its doors in 2004. She is a member of every task force initiated by the district or school such as the School Improvement Plan, the School Renovation Committee, and the Technology Committee. She leads professional development sessions at Harmony School and attends professional development programs offered to her throughout the school year and summer. When I ask her about her success at Harmony School she boils it down to one thing, “being involved with the community.” (TI/Ms.S/09/09/09: 25)

#### *Students*

Of the 24 students in Ms. Sanchez’s classroom at the time of this study, all of the parents provided written consent for their daughters<sup>1</sup> to participate in the study. Each of the girls provided verbal assent. Eighteen of the girls were 6 years and 6 of the girls were 5 years old. The student population of the school is 99% Black and 1% Multiracial. Additionally, 88% of the students qualify for free lunch.

---

<sup>1</sup> The school is a single-sex public school. Therefore all the students in the school are girls.

### *Data Sources*

Our data collection included two data sources: transcripts from audio-taped photo-talk student interviews (Serriere, 2010) and field notes from video-taped observations of classroom instruction. The data sources were collected according to the following procedures and protocols:

*Photo-talk interviews.* For this study, 75 interviews were conducted with an average of 3 interviews per student over the course of the study. Photo-talk interviews are a photo-elicitation technique. Photo-talk (Serriere, 2010) is used in memory recall for very young children; while at the same time providing them with an opportunity to question, explain, and reflect on moments captured by the camera (Serriere, 2010).

*Field notes.* Field notes were taken of the science instruction in the classroom and science lab. Depending on the comfort level of the students, Author 1 sat with them during instruction and answered their questions if they asked and participated in the classroom activities. Field notes were collected of instructional techniques in 20-minute increments noting the use of text materials, type of instruction, and classroom activity.

### *Data Analysis*

To accomplish a constant comparative analysis (Strauss, 1987), we read and re-read all videotaped instruction with field notes and photo-talks while engaging in open coding during which time recurring patterns that connected to the research questions were sought.

### Results

The two themes that emerged were encouragement of “D”iscourse and flexible practices. Because of the space requirements of this proposal, only one example of one theme will be described. In the full paper, both themes will be thoroughly examined and explained.

### *Encouragement of “D”iscourse*

Ms. Sanchez encouraged a broad sense of discourse by validating home knowledge and local Discourses. Capital “D” Discourse is used here to represent Gee’s (2001) way of representing an inclusive type of Discourse which includes the words we speak, how we speak the words, and the knowledge represented by those words. In the following example, Ms. Sanchez and one of the girls, M’Kayla, were having a discussion about something M’Kayla’s mother taught her in regards to growing plants. In this example, Ms. Sanchez was teaching the girls about composting at the same time as she was teaching about plants. She hoped the compost would be able to turn to soil and the girls will be able to add it to the indoor vegetable garden they have created. She allows the girls to retrieve their plants from the windowsill to measure their growth. M’Kayla looks down at her plant and is disappointed that it is not growing yet. Below is a videotaped conversation of Ms. Sanchez and M’Kayla:

*M’Kayla: Grow little baby, grow little baby. Grow little plant, grow.*

*Ms. Sanchez: Why are you talking to your plant, M’Kayla?*

*M’Kayla: Cause I wanted to have a big ol’ plant and I want to plant flowers every day.*

*Ms. Sanchez: Oh, I see and you think that by talking to your plant that would help it grow?*

*M’Kayla : Yes, my momma tells me that. Except for we need all the stuff to put in there too. We need to put soil, water, give it sunlight and also you need to take care of your plant by watering it every day.*

*Ms. Sanchez: (nodding) I like to talk to my plants too. Why don’t you feel the soil*

M’Kayla touches the soil with her finger

*Ms. Sanchez : What did it feel like?*

*M'Kayla: It feeled a little wet.*

*Ms. Sanchez: Okay, well let's wait until tomorrow to water it. We don't want to give it too much water, okay.*

M'Kayla smiles and folds her hands and then continues to talk to her plant telling it to “grow”.

(Videotaped observation: 09/28/09:4-16)

In this moment, Ms. Sanchez validated M'Kayla's mother's knowledge of plant growth by telling her that she liked to talk to plants as well. Then M'Kayla offered her understanding of what a plant needed to grow. During this exchange, Ms. Sanchez encourages M'Kayla to describe her home experiences while authenticating them.

### **Discussion**

In this study, Mrs. Sanchez made certain pedagogical choices that created moments of Third Space construction—moments in which the distance between home and school was smaller, moments in which the girls were able to describe science in their own words, and moments in which the girls described a connection with science. She chose to allow all of the girls to have a voice in their classroom.

As teachers feel pressure to further align curriculum between grade levels, how do we encourage teachers to continue using meaningful strategies and to balance incidental learning with explicit instruction. NAEYC (2009) states that a critical issue in early childhood education continues to be the recognition of teachers' decision-making ability. Teachers often have more expertise in the area of child development than their administrators and/or policy makers in charge of designing curriculum. Due to this fact, it is important to recognize teachers' knowledge and decision-making abilities with regard to the amount that teachers' work should be directed and scaffolded. If teachers' moves

are prescribed entirely in advance, the freedom to use their expertise to adapt to individual children's needs is taken away. A balance between using a quality curriculum framework and allowing teachers to adjust teaching strategies based on their expert knowledge will ensure that individual needs of children are met and that a Third Space is able to be constructed.

### **Scholarly Significance**

The implications of this study are two-fold. First, this study assists inservice teachers in thinking about how to foster opportunities in the classroom to construct Third Space. Second, it informs teacher educators about ways to better prepare preservice teachers to encourage Discourse and use flexible practices. As classroom teachers strive to balance the pressures of standardized curriculum goals with meaningful and differentiated instruction, the findings from this study remind teachers how crucial it is to capitalize on the funds of knowledge (i.e., important social and cognitive resources) that each child brings to the classroom. "Funds of Knowledge" theory supports reciprocity of ideas between teachers, students, and their families, which leads to the development of long-term relationships and successful partnerships (Moll, Amanti, Neff, & Gonzalez, 1992).

Moreover, Moll et al. (1990) found that the use of a structured and prescribed curriculum does not allow easy access to resources that exist outside the classroom and that by redefining teaching as a social and cultural practice, families from different locations, communities, and socioeconomic backgrounds are more likely to participate in their child's learning. By affirming home and community practices through the use of participatory instruction (i.e. forms of teaching in which children and teachers are active

co-creators of knowledge), teachers can help build positive social identities for students by taking full advantage of each student's unique experiences and dispositions (Thomson & Hall, 2008).

## References

- Alozie, N. N. M., Moje, E., Krajcik, J. (2009). An analysis of the supports and constraints for scientific discussion in high school project-based science. *Science Education*, 94(3), 395-427.
- Brown, B. A., Ryoo, K. & Rodriguez, J. (2010). Pathway towards fluency: Using 'disaggregate instruction' to promote science literacy. *International Journal of Science Education*, 32(11), 1465-1493.
- Chin, C. (2006). Classroom interaction in science: Teacher questioning and feedback to students' responses. *International Journal of Science Education*, 28, 1315-1346.
- Gee, J. P. (2001). Identity as an analytic lens for research in education. *Review of Research in Education*, 25(99-125).
- Gutiérrez, K., Baquedano-López, Alvarez, H., & Chiu, M. M. (1999). Building a culture of collaboration through hybrid language practices. *Theory in Practice*, 38, 87-93.
- Lee, O. (2001). Culture and language in science education: What do we know and what do we need to know? *Journal of Research in Science Teaching*, 38, 499-501.
- Lee, O., & Luykx, A. (2007). Science education and student diversity: Race/ethnicity, language, culture, and socioeconomic status. In S. K. Abell, & N. G. Lederman (Eds.), *Handbook of research on science education* (pp. 171-198). Mahawah: Lawrence Erlbaum Associates, Inc.
- Moje, E. B., Tehani, C., Carrillo, R., & Marx, R. W. (2001). Maestro, what is 'quality?': Language, literacy, and discourse in project-based science. *Journal of Research in Science Teaching*, 38, 469-498.
- Moll, L.C. et al. (1990). *Community knowledge and classroom practice: Combining resources for literacy instruction*. Retrieved from ERIC database. (ED341968).
- Santau, A. A. O., Walter Secada, Jaime Maerten-Riverab, Neporcha Cone, & Okhee Lee. (2010). US urban elementary teachers' knowledge and practices in teaching science to English language learners: Results from the first year of a professional development intervention. *International Journal of Science Education*, 32(15),

2007-2032.

Serriere, S. (2010). Carpettime democracy: Digital photography and social consciousness in the early childhood classroom. *The Social Studies*, 102(1), 60-68.

National Association for the Education of Young Children. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, D.C.: NAEYC.

Thomson, P. & Hall, C. (2008). Opportunities missed and/or thwarted? 'Funds of knowledge' meet the English national curriculum. *The Curriculum Journal*, 19(2), 87-103.