

## Chapter 82

# Becoming Teacher Researchers: Using English Learners' Linguistic Capital to Socially Re-Organize Learning

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### ABSTRACT

*Drawing on three years of data, we show how an embedded university research team and eleven K-8 educators reorganized learning and negotiated innovative curricular activities for English learners (ELs) in spite of restrictive curricular mandates in an urban Midwestern district. We analyze how participating teachers appropriated theoretical constructs such as cultural historical activity theory (CHAT), third space, funds of knowledge, as well as using discourse analysis to design curriculum aimed at improving language learning through mathematics, science, and community-based problem solving. The learning of teachers was purposefully designed to develop new professional identities. The learning was also designed to move teachers from deficit views of multilingualism to dynamic stances grounded in polyglot language ideologies. We examine the challenges and opportunities of participants' movement from resistant, procedural, and ethnographic identities towards teacher researcher identities.*

### INTRODUCTION

As multicultural students, they are accustomed to moving across linguistic and cultural boundaries as well as dominant and non-dominant ideological spaces. In the context of global linguistic flows and transnational movements, it is a phenomenon

that is increasingly prevalent in urban schools across the world. Teacher education programs across the world are expected to prepare educators to leverage such movements for classroom learning. In the United States, English Learners (ELs) are the fastest growing segment of the student population, and the U.S. Department of

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Education has recognized the need for increased teacher professional development that addresses the needs of this population. ELs often do not share the dominant discourse practices of the classroom; as a result, their ability to participate in discussions is constrained and learning opportunities are lost. Teachers are often unaware of the consequences for how their own underlying language beliefs, attitudes, and practices, or *language ideologies* can inform how they impede or enhance teaching linguistically diverse learners (Razfar, 2011b). Thus, it is necessary for teachers to consciously reflect on how to design academic activities that leverages ELs' linguistic funds of knowledge. In this chapter, we present multiple case studies of teachers becoming researchers of their instructional and discursive practices. We examined how mainstream teachers socially re-organized learning to foster ELs' primary languages through integrated mathematics and science activities.

As ELs have rapidly transitioned into mainstream classrooms throughout the United States, it is critical that teachers become conscious of ELs' language ideologies *vis a vis* their linguistic and cultural funds of knowledge. In this chapter we present a professional development model geared toward developing teacher researchers who critically reflect on language practices in the classroom. Our embedded partnership positioned teachers as active learners, curriculum designers, and problem-solvers (Cochran-Smith & Lytle, 2004). We adopted a sociocultural approach to doing action research where sociocultural tools of language and learning were used to empower teachers to become teacher researchers and curriculum designers (Razfar, 2011a).

Since 2007, with the support of the Department of Education, we have partnered with twenty-six Midwestern urban public schools with the explicit goal of "transforming literacy practices through mathematics, science, and action research" (Razfar, 2007). Under the Next Generation Science Standards (NGSS), teachers of ELs are account-

able for raising the rigor of science to emphasize engagement in scientific and engineering practices, comprehension of core knowledge and ideas, and the application of crosscutting concepts to link multiple science domains. Many teachers struggle to make NGSS comprehensible for ELs because they have limited expertise in second language acquisition or inadequate pedagogical content knowledge to integrate ELs' language and culture with science content. The NGSS address this gap to enable teachers to draw on *funds of knowledge* (FoK) that connect science learning with ELs' everyday language practices. The NGSS (2013) recommendations emphasize that effective teachers ask questions that elicit students' FoK in relation to science and that they use community resources in academically and culturally relevant and *sustaining* ways (Paris, 2012). In the following section we provide an overview of the conceptual frameworks that guided our study. The primary objectives of this chapter are to show:

1. How teachers working with university researchers take up research identities in the context of building curricular activities that integrate literacy, mathematics, and science through students' FoK;
2. How teachers move from deficit to dynamic language ideologies in order to foster ELs' primary languages through integrated mathematics and science activities.

## BACKGROUND

### Participants

For nearly a decade, the university research team has worked with more than ninety teachers spanning twenty-six K-8 schools in a large urban Midwestern school district. In most cases, several teachers from the same school collaborated on the action research projects. A member of the research

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