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Language Learning and Technology in and for a Global World

By

Emily A. Hellmich

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

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University of California, Berkeley

Committee in charge:

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Professor Glynda Hull

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Language Learning and Technology in and for a Global World

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Abstract

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Doctor of Philosophy in Education

University of California, Berkeley

Professor Claire Kramsch, Chair

More than ever before, schools and societies are looking to educate children in and for a global world. In the United States, these efforts have taken the form of increased interest in incorporating global or international perspectives into educational curricula, programs, and policy over the past decade (Hayden, 2011; Parker, 2011; U.S. Department of Education, 2012). Despite this interest in what I call *global education*, ambiguity remains regarding what it means to provide an education for a globalized world, both in terms of its underlying motivations and its ultimate execution in practice (Ortloff, Shah, Lou, & Hamilton, 2012).

Two components often placed at the heart of these efforts in the United States—second/foreign language and digital technology—both reflect and contribute to understandings of global education. This study, rooted in an ecological theorization of discourse, asked how different school actors (teachers, administrators, parents, and students) position these two components in education today, how these positionings differ across groups, and what this means for understandings of global education.

These questions were investigated through two complementary approaches: a survey distributed to a large cross-section of schools around the United States and an in-depth focal case study of one school. The survey was distributed to teachers, students, parents, and administrators at a broad range of U.S. secondary schools and assessed perceptions of second/foreign language and digital technology in education today. The focal case study focused on two secondary classrooms at a multilingual immersion K-8 school in the western US over a four-month period; data collection included field notes, analytic memos, and audio/video recordings from participant observations as well as multiple rounds of interviews with five students, four teachers, two administrators, and three parents. Data were analyzed using iterative rounds of inductive and deductive coding (Miles & Huberman, 1994; Saldaña, 2009) and critical discourse analysis (Blommaert, 2005; Fairclough, 2001).

Findings suggest that second/foreign language and digital technology were positioned in a range of different ways that had concrete ramifications for schools and that built up divergent understandings of global education. The survey component of the study highlighted common discourses reproduced across groups, including: second/foreign language learning as a way to promote cultural understanding and awareness as well as economic opportunity; or digital technology as a threat to learning and as an omnipresent necessity.

The focal school offered a more detailed look into these different discourses and their reproduction across groups. Analysis revealed trended similarities and differences across groups. For example, even though parents, teachers, and administrators often articulated a similar understanding of second/foreign language and digital technology, parental actions suggested more alignment with economic-based understandings of these two components. These differences in how second/foreign language and digital technology should be positioned within a global education created a "battle" between parents and the focal school as well as tension within the learning environment. The impact of these discourses and battles on students was unclear: while students at times voiced the discourses that their parents, teachers, and administrators reproduced, data also suggests that students were influenced by outside sources. These findings suggest that resulting understandings of global education were multiple and divergent across school groups.

Data analysis also revealed the potential that anxiety, concern, or even fear of globalization and its effects could undergird adult understandings of second/foreign language and of digital technology: beneath economic as well as cultural motivations for second/foreign language and for digital technology learning resided trepidation about a changing world, changing identities, and the unknowns that lay ahead. This suggests that, underneath multiple and complex discourses, there can be a singular discourse that manifests in different ways, nuancing understandings of ecological approaches to discourse. It also suggests that different understandings of global education could stem from the same place: fear or anxiety in the face of a globalizing world.

These findings highlight the need for a global education that equips students to navigate a changing world, its challenges, and any potential fears that may arise from these changes and challenges. The study concludes with a pedagogical framework built around discourse analysis that could offer students tools to understand their globalizing world.

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Transcription Conventions

(.)	Brief pause
(1.0)	Pause of 1 second
(5.0)	Pause of 5 seconds
—	Speaker self-repairs or restarts
::::	Elongated sound in middle or end of word
=	Turns before and after are latched together (no pause between)
( )	Items within describe nonverbal behavior
[ ]	Items within are clarifications added by the researcher, including translations
“ ”	Items within are quoted speech
////	Items within overlap with another speaker’s speech
Really	Underlined portions of words denote emphasis
It’s good?	Question marks denote rising intonation
It’s good.	Periods denote falling intonation
Ahorita	Italics words are in a language other than English

All other punctuation marks (periods, commas, question marks, exclamation points) are used as in standard writing.

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PREFACE

"You know we are educating children to be living on this globe."
-School Administrator, California, USA

More than ever before, we talk about educating children in and for a global world. It makes sense: globalization—"shorthand for the intensified flows of capital, goods, people, images and discourses around the globe" (Blommaert, 2010, p.13)—is widely accepted to impact all facets of life today, including education.

But what exactly do we mean by educating and education in this globalizing context? What are we educating students with—what philosophy? what pedagogy? what values? What are we educating them for—what goals? what vision? what kind of imagined future? What, in other words, do we mean when we say "global education"?

And, perhaps most importantly, does it matter?

It matters. The answers to these questions hold ramifications for learning, for teaching, for society, and for the future we are creating. Indeed, the impetus for embarking on this study is rooted in the concern that U.S. education in the context of globalization stems from a problematic place—one of competition over compassion, one of markets over morality. This study sets out to explore that concern.

"Global schools" and the "global education" movement in the United States offer an interesting opportunity to explore these questions: while all educational institutions are arguably shifting under the push/pull forces of globalization, global schools—defined here as schools that have officially integrated a global or international component into their educational offerings[1]— are directly and intentionally responding to globalization and its call. These schools, then, offer an opportune context for exploring what it might mean to provide an education in and for a global world.

Two components placed at the heart of global schools—second/foreign language and digital technology—will be the dual centerpieces of this current inquiry. It is the assertion of this work that the ways in which second/foreign language and digital technology are thought about and used in school spaces both reflect and contribute to understandings of education today, influencing teaching, learning, and students in telling ways. It is my hope that, by looking deeply into these two components and their relationships within the context of global schools, we can shed some light on what U.S. education in a global world means today as well as how we might move beyond it toward a better future.

[1] See Chapter 2 for detailed criteria and definitions.

CHAPTER 1: LITERATURE REVIEW

Introduction

In recent years, there has been an increased interest in incorporating global or international perspectives into educational curricula, programs, and policy within educational circles in the United States. Despite this interest in what I will call *global education*, ambiguity remains regarding what it means to provide an education for a globalized world, both in terms of underlying motivations and its ultimate execution in practice. Within this ambiguity, two components are often considered central to a global education by schools, policy makers, and program developers: second/foreign language and digital technology. That said, second/foreign language and digital technology can be understood and positioned in a range of different ways; there are, in other words, multiple discourses of second/foreign language and digital technology. By analyzing these discourses as they are appropriated and reproduced by different school actors, we can shed light on the inner-workings of the global education movement as well as explore what it might mean to provide an education in and for a global world.

In this chapter, I review the global education movement, from both contemporary and historical perspectives, as well as different discourses of both second/foreign language and digital technology. I then discuss the potentials of an ecological approach to discourse for an analysis of how different school actors position these two components in global education. I conclude with the organization of the dissertation as a whole.

Globalization and Global Education

The driver of this—and arguably past—manifestations of global education is globalization. While globalization is certainly a hotly-debated phenomenon, scholars across disciplines agree that the processes of globalization and its resulting "globality" (Kumaravadivelu, 2008) involve an increase in the intensity and degree of interconnectedness—not only economic, but also social, cultural and political—across traditional borders and boundaries (Appadurai, 1996; Arnett, 2002; Block, 2012; Blommaert, 2010; Kumaravadivelu, 2008; Rizvi & Lingard, 2009). I draw on Blommaert (2010), defining globalization as:

> shorthand for the intensified flows of capital, goods, people, images and discourses around the globe, driven by technological innovations mainly in the field of media and information and communication technology, and resulting in new patterns of global activity, community organization and culture. (p. 13)

The intensity and scale of the interconnection that characterizes the globalization processes of the past few decades have been linked to the deregulation of financial markets in the mid-1980s as well as to technological innovations such as the Internet. That said, the interconnection at the heart of globalization is not new (Kumaravadivelu, 2008; Lo Bianco, 2014; Rizvi, 2007). Scholars have pointed to other historical periods marked by interconnection—such as the Spanish and Portuguese exploration in the 16th century; industrialization and imperialism in the 17th and 18th centuries; and the World Wars of the 20th century—as the historical antecedents and previous manifestations of globalization (Kumaravadivelu, 2008).

Beyond this consensus, however, debates related to globalization range in size and topic, including: whether or not globalization is primarily a real or ideological trend (Rizvi & Lingard,

2010); the role of the nation-state in a globalized world (Blommaert, 2010; Kumaravadivelu, 2008; Rizvi & Lingard, 2010); and whether or not globalization assuages or exacerbates inequality (Block, 2012; Friedman, 2005; Gray, 2012). Of these debates, one will be central to this work: how has the interconnection at the heart of globalization impacted education in the United States?

Historical background. Like globalization itself, the link between global interconnection and education is not a new one: the phenomenon of outwardly-oriented education is rooted in the long history of *international education*. I will touch on two subcomponents of international education—international schools and the internationalization of public K-12 education—in an attempt to weave together the pieces that comprise the global schools and global education movement in the United States today (Dolby & Rahman, 2008; Hull & Hellmich, in press). (For more information on global and international schools outside the United States, see Hayden, 2011.)

International schools. International schools were originally developed to serve the new class of mobile diplomats and businessmen that emerged following WWI (Dolby & Rahman, 2008; Hill, 2012). These schools were commonly conceived as a way to provide the children of this mobile elite access to the curriculum, culture, and language of their home nation-states.

Since the 1920s, schools bearing the label "international" have increased, although their exact number is unknown due to the lack of a regulating body and definitional ambiguity (Hayden, 2011). Alongside this increase in number, the international school as it was first conceived has changed dramatically, evolving to include multiple conceptualizations and models. For example, while originally conceived in elite terms, international schools today are also being sought after by the local upper middle class of the host country, often at a high price tag (Bunnell, 2008a; Hayden, 2011). Moreover, some international schools have shifted toward the spirit of "international mindedness"— "the study of issues which have application beyond national borders" (Hill, 2012, p. 259)—rather than the curriculum, culture, and language of a particular nation-state. In other words, international schools are being redefined today both in terms of student populations served, pedagogical approach, and targeted content areas. In the United States, then, the list of international schools includes schools offering the curriculum of a particular country (e.g., the German School Washington, DC or Lycée Français de Los Angeles) as well as schools offering internationally-oriented curricula, such as the international baccalaureate (IB), without an affiliation with a particular country (e.g., the International School of Denver or Atlanta International School).

Internationalization of K-12 education. A separate historically-rooted movement to internationalize K-12 public education developed alongside international schools. In the United States, this movement took serious root during the late 1960s and 1970s, a period marked by social, political, and economic events that further heightened Americans' sense of connection to a larger world (Abdullahi, 2010; Dolby & Rahman, 2008; Ortloff, Shah, Lou, & Hamilton, 2012; Parker & Camicia, 2009; Tye, 2009). (For a review of the internationalization of K-12 education before this time, see Tye, 2009.) Some of this internationalization of K-12 schooling aligned with idealistic goals: cultivating an awareness of the need to value and work toward a peaceful world (Abdullahi, 2010; Dolby & Rahman, 2008, p. 701); for example, the prominent publication "An Attainable Global Perspective" argued for an increased understanding of global perspectives and the United States' interdependence with other nations through a global education (Hanvey, 1976).

However, the goal of cultivating a peaceful world through mutual understanding has also long stood in tandem and in competition with more ethnocentric, nationalistic arguments for education and the inclusion of global or international perspectives in education. For example, the election of Ronald Reagan and his accompanying administration in the 1980s, which contributed to the current manifestation of globalization, both squelched efforts to foster global awareness as well as promoted fear in relation to the economic and military security of the nation: publications like "Blowing the Whistle on Global Education" framed global education as anti-American (Parker & Camicia, 2009), while "A Nation at Risk" explicitly compared the U.S. education system to other national systems and declared the failure of U.S. schools to prepare an internationally-competitive workforce (Ortloff et al., 2012).

The past 15 years have seen a new wave of efforts to internationalize K-12 education (Parker, 2011). For example, we can see this increase in the development of both new elite schools with outwardly-focused emphases (e.g., Avenues, 2016) as well as the integration of language referencing global or international perspectives to existing school missions and curricula (e.g., Parker, 2011). In addition, we can see this growth in the establishment and development of non-governmental organizations (NGOs), such as World Savvy (2016), which provide youth and schools with curricula and programs that turn focused attention to what is going on beyond national borders (Mansilla & Jackson, 2011; Parker, 2011). Finally, interest at the federal level has been peaked: the U.S. Department of Education report (2012) "Succeeding Globally through International Education and Engagement" outlines why global competencies are strategically important to the US and how they can be achieved (U.S. Department of Education, 2012).

Global education. The internationalization of K-12 education and international schools are admittedly blurred categories: a new school that looks to teach students to understand and respect international perspectives could be considered both an international school (Sylvester, 1998) as well as the result of internationalization efforts (Dolby & Rahman, 2008). Given this terminological diversity and in order to signal the intensification of efforts to include non-local perspectives in educational offerings, I use the labels *global education* and *global schools* (Hull & Hellmich, in press) to describe the current interest.

Despite this interest, the movement toward global education as it manifests today remains largely fragmented, ambiguously defined, and without a sufficient research base in the United States (Ortloff et al., 2012). A primary component of this ambiguity is the curious and even contradictory mix in orientations to global education, seen in past manifestations and salient today. Using a range of different terms, scholars have underscored a primary distinction between *idealistic approaches,* which see global education as a way to foster understanding and respect for others; and *utilitarian approaches*, which see global education as a way to promote particular market-driven skill sets, often framed in terms of military and economic competitiveness (Bunnell, 2008b; Gaudelli & Heilman, 2009; Hayden, 2011; Hill, 2012; Lallo & Resnik, 2008; Ortloff et al., 2012; Oxley & Morris, 2013; Parker & Camicia, 2009; Parker, 2011; Slyvester, 1998). While these two orientations could be seen as contradictory, they are not perfectly-delineated categories: schools or programs do not always fully subscribe to one particular approach (Bunnell, 2008a; Hayden, 2011). This suggests that global education stands as a complex terrain on which goals are being constantly repositioned and redrawn.

Language and Digital Technology in Global Schools

Within this ambiguity, schools, policy makers, and program designers often place two components—second/foreign language learning and digital technology[2]—as central to global schools and a global curriculum. For example, Avenues: The World School, headquartered in New York City, stands as a quintessential example of a school born at the height and in the spirit of the current global education movement. And at the core of its branding and its educational offerings are both second language learning and digital technology: currently, Avenues offers partial immersion in Chinese or Spanish and states in its mission statement that their graduates will be "truly fluent in a second language" (Avenues, 2014). It additionally situates digital technology as a cornerstone of its pedagogical and curricular infrastructure, placing a hybrid-learning model as one of its primary operating principles and touting its cutting-edge integration of digital technology in all aspects of the school day (Avenues, 2016).

Similarly, one of the leaders in global education in the United States, The Asia Society, positions both digital technology literacy and second language fluency as central to three of their four core components of global competence (Mansilla & Jackson, 2011). Moreover, national policy reports from both the U.S. Department of Education (2012) and the Council on Foreign Relations (2012) have singled out these two pieces as central to reforming education to fit a global world.

The message inherent in this pairing made by schools, policy makers, and program designers is clear: to educate students in and for a global world, educational offerings need to include second/foreign language and digital technology. While their placement as central components by global schools themselves is reason enough to investigate them, we might also hypothesize why these two components are placed together and what this might indicate about global education. One possibility places these two under the umbrella of global flows and the need for "global communication" that results: within globalization, people and information cross borders with increased ease and speed, making the use of multiple languages as well as digital technologies paramount in order to navigate as well as make meaning within diverse, multilingual, and multimodal spaces.

This "global communication" comes with its fair share of criticisms, however (Block, 2002; Cameron, 2002; Castells, 2009). Castells (2009) for example, underlines that the increase in "horizontal" communication channels that characterizes our network society may increase or even democratize the ways in which information is distributed and generated around the world; he also cautions, however, that this communication may be more *superficial* in nature. This is echoed and extended in Cameron's critique of the new global communication culture and "communication skills" (Cameron, 2002). In her analysis, Cameron argues that current language learning, teaching, and use trends seek to level deep cultural differences in favor of Western upper middle class norms, imposing a new twist on linguistic imperialism. Relatedly, Block criticizes "communicative" language learning and teaching approaches that have been popular over the last few decades as being largely "referential in nature and framed as efficient, calculable, predictable, controllable, and standardized negotiation of meaning" (Block, 2002, p. 131).

In other words, while language and technology could come together within global education due to a certain perceived necessity to communicate across borders, languages, and mediums, the nature and aims of that communication could stand as problematic, to say the least.

[2] Throughout this dissertation, I focus on digital technologies. Unless otherwise specified, the "technology" I refer to is digital in nature.

Moreover, this would indicate that global education itself may respond to as well as reproduce this problematic communication paradigm, putting into question the motivation and values that drive the movement as a whole.

That said, the ecological frame that is adopted in this study (see below) looks to avoid assumptions and *a priori* calculations or categorizations. Indeed, as we will see in the following section, the story becomes even more complicated when we consider the range of ways in which these two components could be understood: from modernist to utilitarian views of language and from threat to benefit views of digital technology, both second/foreign language and digital technology have been understood in many different ways within society and within education. There are, in other words, alternate possibilities for why these two components are placed together as well as alternative possibilities to consider in terms of what these positionings mean for understandings of global education. As such, a nuanced understanding of how second/foreign language and digital technology are positioned in global schools by different school actors (teachers, administrators, parents, and students) offers an opportunity to illuminate how global education is ultimately understood by different individual global school actors, groups, and schools.

Second & Foreign Language Discourses

To that end, I move now to a discussion of the different discourses surrounding second/foreign language and digital technology today in order to give a sense of the different and disjointed ways in which these two components have been positioned and how they could be positioned by global school actors within global education efforts. I use the term *discourse* in the Foucauldian sense: the multiple ways of making and organizing meaning through symbolic systems like, but not limited to, language (Foucault, 1978; Pennycook, 1994, p. 128). Discourses, then, structure society itself, framing the different ways in which individuals interact with and understand the world around them. I will elaborate on discourse, discourse theory, and its relation to the project as a whole in the theoretical frame section of this chapter.

What is language? Modernist and postmodernist perspectives. Among the multiple discourses that have surrounded second/foreign language and learning in the United States over the 20th and 21st centuries, a modernist discourse has long occupied a dominant position (Canagarajah, 2013; De Schutter, 2007; Kramsch, 2014; Weber & Horner, 2012). A modernist discourse situates languages as discrete, standardized units that are tightly linked to the nation-state (Canagarajah, 2013; Kramsch, 2014); consequently, there is a correct and ordered way of using language; a sense of language as a bounded system; and the notion of a normative monolingual native speaker who is a member of a homogeneous culture (Kramsch, 2014).

This modernist discourse has cropped up in several studies looking at the role of language in American schools today (Johnson, 2012; Martínez, Hikida, & Durán, 2015). For example, Martínez, Hikida, and Durán (2015) looked at the articulated and embodied language ideologies[3] of two dual language Spanish-English teachers. The authors found that while both teachers strongly supported bilingual education, they also articulated as well as enacted a discourse of linguistic purism in interviews as well as in their classrooms. The pervasiveness of a modernist language discourse has also been illustrated at a macro policy level by Johnson (2012): in a discourse analysis of four major language-related policy documents (Bilingual Education Act of 1968; No Child Left Behind, 2002; National Security Language Initiative, 2006; and A Blueprint

[3] The post-structuralist understanding of discourse incorporates the way in which other terms, such as ideology, have been used and defined.

for Reform, proposed replacement from President Obama, 2010), Johnson highlighted an almost impermeable penchant for English monolingualism, save for specific contexts in which multilingualism was seen as nationally advantageous; I will discuss this particular stance in detail in the next section.

The fact that a modernist orientation to language persists in these studies and throughout society is not fundamentally surprising; as Kramsch (2014) states, the language teaching profession has long been "a highly modernist profession" (p. 297), anchoring itself on the existence of nation-states with standardized, separate, national languages. More generally, this understanding and positioning of language has been a dominant one since the rise of the nation-state in the 18th century (Canagarajah, 2013; De Schutter, 2007), constituting vernacular and "popular" understandings of language in the United States and around the world (Weber & Horner, 2012).

That said, different understandings of language that challenge a modernist orientation do exist. Indeed, many scholars in the past decade have highlighted the juxtaposition between the continued weight of a modernist understanding of language with the way in which language is actually used today (e.g., Blackledge & Creese, 2011; Blommaert, 2010; García, 2009; Kramsch, 2014; Weber & Horner, 2012). In other words, there is a concern that, when operating under a modernist orientation, "we lose the notion that languages are mobile, heterogeneous, and hybrid resources that combine with other semiotic resources to make meaning in context" (Canagarajah, 2013, p. 23). These scholars advocate thinking of languages, not as standardized units,

> but rather as a complex set of specific semiotic resources, some of which belong to a conventionally defined 'language,' while others belong to another 'language.' The resources are concrete accents, language varieties, registers, genres, modalities, such as writing-ways of using language in particular communicative settings and spheres of life, including the ideas people have about such ways of using, their language ideologies. (Blommaert, 2010, p. 102)

Although a range of terms have been employed (e.g., flexible multilingualism, translingual practice), this postmodern, heteroglossic understanding sees language as diverse semiotic resources deployed by agentive users in particular social, cultural, historical, political contexts (Blackledge & Creese, 2009; Blommaert, 2010; García, 2009; Kramsch, 2014; Weber & Horner, 2012).

Some research has surfaced to support the presence of this orientation to language (Blackledge & Creese, 2010; Blackledge, Creese, & Takhi, 2013; Canagarajah, 2012, 2013). For example, Canagarajah (2012) produced an ethnographic case study of one multilingual graduate student in the United States that illustrated, through analysis of her writings as well as interview data, how she drew from her multiple fonts of linguistic and literacy knowledge to make meaning. Similarly, Blackledge, Creese, and Takhi (2014) looked at one class session within a Punjabi heritage language schools in England, illustrating how participants used different languages in single utterances and in single interactions as well as how these choices reflected a sophisticated indexical relationship with both the local as well as social contexts (Blackledge, Creese, & Takhi, 2013). These studies, among others, point to an embodied discourse of language that aligns with a postmodern and heteroglossic orientation.

That said, while the postmodern, heteroglossic view of language has become increasingly popular today among sociolinguists and applied linguists (Blackledge & Creese, 2010;

Blommaert, 2010; Blommaert & Rampton, 2011; García, 2009), the continued power that traditional "languages" and language discourses holds cannot be underestimated (Blackledge & Creese, 2010; Makoni & Pennycook, 2006): language as it is traditionally conceptualized remains an integral part of individuals' identities as well as an integral piece in nation-state reproduction and maintenance. This explains the scarcity of research that identifies an articulated postmodern and heteroglossic understanding of language as well as highlights that language discourses co-exist today, interacting in what we will see are interesting, tension-fraught ways.

What is the role of language? Idealistic and utilitarian perspectives. In addition to modernist as well as postmodernist discourses of language learning, idealistic and utilitarian discourses of language learning can also be identified. In a similar vein to the idealistic approach to global education more broadly, idealistic orientations see language learning as about well-roundedness and understanding other cultures (García, 2009; Kubota & Catlett, 2008; Smala, Paz, & Lingard, 2012). For example, García (2009) describes the rise of conceiving of language as a resource after the Cold War and with the rise of globalization in terms of the learner's ability "to interact within their own ethnolinguisitc community, as well as with others" (p. 16). Indeed, this discourse has long been used as a rationale for teaching second and foreign language in schools (Kubota & Catlett, 2008). In addition, invoking cross-cultural understanding and communication has also taken place within schools implementing global education programs. For example, through discourse analysis of interviews done with international education leaders as well as of district and national policy documents, Parker (2011) identified two discourses that positioned language within a more idealistic frame: a "global perspective discourse" which saw language learning as part of developing a cultural consciousness of a larger world system as well as a "cosmopolitan" discourse which positioned language as developing political consciousness, supporting students in becoming citizens of the world (Parker, 2011).

Beyond school settings, the idealistic discourse surrounding language learning appears in national conversations as well. Take, for example, the 2012 U.S. Department of Education report on international education, which argues that, while English is widespread, "speaking another language and understanding the culture that accompanies the study of this language, improves communication and effective working relationships" (p.7). Similarly, the 2015 bi-partisan Congressional request for report on the status of language learning in the US cited the increasing need for Americans to engage in "international understanding and cooperation" as "communication between and among cultures increases" (American Academy of Arts & Sciences, 2015) among its rationales. This kind of rationale was also invoked by the last committee of this nature: in lambasting the state of language learning in the United States, the 1979 President's Committee on Foreign Language and International Study made some idealistic appeals, including the claim that "A nation's welfare depends in large measure on the intellectual and psychological strengths that are derived from perceptive visions of the world beyond its own boundaries" (Perkins, 1980, p.11).

Important to note in all of these examples, however, is the co-presence—and perhaps even the more dominant presence—of other discourses of language learning, discourses of a more *utilitarian* nature. For example, while Parker did identify cultural and political connectedness in the global perspective and cosmopolitan discourses in international education and language learning, these were cited as "peripheral" discourses; the more prominent or "strong" discourses identified within the international education movement in the United States—economic and military security discourses—positioned language learning as a way to keep the nation militarily safe and economically competitive, providing students with the skills

to communicate with allies and enemies, business partners and competitors (Parker, 2011, p. 497). Similarly, the 1979 President's Committee on Foreign Language and International Study situated its critiques largely in terms of national security, attaching the more idealistic inklings cited above to this larger conceptualization of language:

> Nothing less is at issue than the nation's security. At a time when the resurgent forces of nationalism and of ethnic and linguistic consciousness so directly affect global realities, the United States requires far more reliable capacities to communicate with its allies, analyze the behavior of potential adversaries, and earn the trust and the sympathies of the uncommitted. (Perkins, 1980, p. 11)

The same is true for the 2012 U.S. Department of Education international education strategy document: citing a 2012 report from the Council on Foreign Relations, the document positions language as "essential for national defense, intelligence, homeland security and law enforcement" (p.2)

These utilitarian discourses position language and language learning in practical or utilitarian terms rather than in idealistic ones. We can identify several utilitarian language discourses. First, as evidenced by all these sources, language learning can be understood as serving national military security: affording the nation the ability to communicate and acquire intelligence on allies as well as enemies (Council on Foreign Relations, 2012; Parker, 2011; Perkins, 1980; U.S. Department of Education, 2012).

A second kind of utilitarian language discourse, also present in these documents, centers on economics: understanding language as a way to bolster an individual's as well as the nation's economic presence on a global stage and market. An economic utilitarian perspective on language is not new: linking language learning choices to world events as well as a language's role in business and trade has long stood as part of the rationale to learn second/foreign language (Lo Bianco, 2014). However, there have been qualitative as well as quantitative shifts in this utilitarian orientation in recent years: the increasing and increasingly intense reduction of language to a marketable, commodifiable, and technicized skill decoupled from identity and history (Block, Gray, & Holborow, 2012; Cameron, 2002; Duchene & Heller, 2012) and used to demonstrate allegiance to the neoliberal marketplace (Bae & Park, 2016; Park & Lo, 2012) constitute a neoliberal language discourse. This neoliberalization of language can be linked to the deregulation of the economic markets in the mid-1980s (the same deregulation that spurred this latest phase of globalization) and the subsequent expansion of free market-based principles and thinking beyond economics (Harvey, 2005).

Recent work by language educators (Block, 2002, 2012; Kramsch, 2014; Kramsch & Vinall, 2015), sociolinguists (Duchene & Heller, 2012a; Heller, 2003; Park & Lo, 2012), applied linguists (e.g., Block, Gray, & Holborow, 2012) has underscored this neoliberalization of language. For example, while bilingual and dual language programs have seen a rise in popularity around the country (Harris, 2015; Valdez, Delavan, & Freire, 2014; Varghese & Park, 2010), several scholars have raised concerns about the motivation—and consequently the language discourse—behind this increased popularity. Petrovic (2005) criticizes attempts to sell "language as a resource"—a popular strategy by language learning defenders and promoters—, arguing that such an argument furthers a "neoliberal mindset" (p. 396); said another way, while using a "language as a resource" strategy to defend or promote language learning may have the intended benefit of improving the perception of bi- and multilingualism in the United States, it

ultimately aligns with and furthers a neoliberal orientation to language and to society as a whole by reducing language to a commodity (Petrovic, 2005). In a related commentary, Varghese and Park (2010) question whether or not the original intention and beneficiaries of dual-language programs—promoting minority language maintenance and minority language students—are being respected today; they call attention to the increasing justification of bilingual education in terms of an economic global marketplace, underscoring not only how the intended target of these programs has shifted to more elite populations but also how language is conceptualized as an added value rather than linked to heritage cultures (Varghese & Park, 2010).

Valdez, Delavan, and Freire (2014) have shown how the concerns of Petrovic as well as Varghese and Park are not without merit: through a critical content analysis of newspaper articles from 2005-2011, Valdez, Delavan, and Freire (2014) confirmed the hypothesized shift in the value discourse surrounding dual language and bilingual education programs in Utah; this shift was characterized by the decline of value discourses relating to equity and heritage matched with the increase in value discourses linked to globalization and human capital; this illustrates, then, the rise in more economic-based discourses of language and language learning in the United States.

Summary. Taken together, there are a range of different discourses surrounding language and a range of different ways in which language could be positioned in global schools. The first is ontological (what is language?); the second is functional (what is the role of language?). Modernist and postmodernist language discourses are ontological, each laying out a theory and definition of language. Idealistic and utilitarian discourses point to how language is conceptualized in terms of its function or role.

Importantly, potential contradictions abound when considering these discourses, both across them as well as in relation to globalization. A modernist conceptualization of language is juxtaposed with and potentially contradicted by a postmodernist orientation to language: a modernist discourse positions language as a standardized system linked to the nation state (Canagarajah, 2013; Kramsch, 2014) while a postmodernist orientation sees language as a part of a larger, mobile set of semiotic resources (Blommaert, 2010; Canagarajah, 2013). In other words, perceiving language as a bounded, nation-based system is largely antithetical to perceiving language as moveable and mutable resources used to make meaning in diverse contexts.

Moreover, modernist and postmodernist language discourses link to the globalization in different ways: while postmodernist understandings of language might be better suited to describe language and its use in our globalized world (Blommaert, 2010; García, 2009; Kramsch, 2014; Weber & Horner, 2012), a modernist discourse remains dominant (De Schutter, 2007; Weber & Horner, 2012).

As is the case with modernist and postmodernist discourses, idealistic and utilitarian language discourses also stand in potential opposition to each other: seeing language as a way to understand others (idealistic) is largely opposed to supporting national as well as individual security/economics (utilitarian). In other words, it would be difficult to target an understanding of the nuances that comprise different cultures and to simultaneously target economic or military competition and superiority through language learning.

Interestingly, globalization could promote both idealistic and utilitarian language discourses. On the one hand, the interconnection of people and ideas at the heart of globalization could produce an increased desire for more cross-cultural understanding and, therefore, support the notion of learning language as a way to better understand the changing world and its inhabitants. On the other, though, globalization could also promote a utilitarian or neoliberal

view of language: the increased interconnection and globalized market places could drive an understanding of language learning as a strategic calculation and language as a commodified skill.

Finally, despite these contradictions, it is likely that individuals and institutions hold multiple, contradictory discourses at once, as has been illustrated in past research studies (e.g., Martinez, Hikida, & Duran, 2015). This lays the groundwork for layered tensions when it comes to language discourses, at the individual and the institutional level.

Digital Technology Discourses

Alongside second/foreign language, digital technology is also positioned as central to what global schools and global education offers students and families. And like language, digital technology has been understood and positioned in a range of different ways.

What is technology?

Technology determinism and technology instrumentalism perspectives. A first basic distinction in these conversations can be made between technology determinism and technology instrumentalism (Carr, 2010; Ellul, 1964; Gee, 2013; Kern, 2015). A technology determinism discourse positions technology as *determining* human activities and practices. Ellul (1964), for example, laments the centrality and expansion of all technologies—the organized and orchestrated ways of getting an end result—in modern society; he argues that this increased integration into society's infrastructure not only obscures traditional human values but contributes to a "determinative" social reality (p. xxviii).

Conversely, technology instrumentalism posits that humans determine the way in which technologies are used. In its extreme version, technology would be seen as a neutral medium or tool, taken up to different ends that are entirely determined by human agents. While this extreme version is not often championed by many digital technology scholars, it has been observed to be the modus operandi of many government and educational policies (Feedberg, 1991).

Importantly, these two perspectives are not mutually exclusive in two ways. First, most people acknowledge some interaction between the influence of the medium and the agency of the user. Kranzberg famously summarized this as "Technology is neither good or bad. Nor is it neutral" (Kranzberg, 1986, p. 545). In other words, technology determinism and technology instrumentalism likely stand as two extremes at either end of a spectrum onto which individuals and policies fall.

Second, individuals can hold and reproduce both these discourses simultaneously, despite the potential contradiction therein. This simultaneity of contrasting perspectives—which we also saw with second/foreign language discourses—will remain a salient theme in the different discourses discussed below and will provide interesting tensions for the upcoming study and analysis.

Technology-as-threat and technology-as-benefit: Social interaction and development. A second distinction in digital technology discourses is whether or not digital technology is bad or good—or, more accurately, to what degrees technology is considered both good and bad—in the form of technology-as-threat and technology-as-benefit discourses. In contrast to second/foreign language, the ontological and functional dimensions of digital technology are often meshed: digital technology's nature as good or bad is often paired with a specific realm of use, such as social interaction and development or cognitive development and learning.

In the realm of social interaction, MIT professor and psychologist Sherry Turkle stands as a critic of digital technology, highlighting the shallowness of human connections that result from

digital technology (2011) as well as the lack of genuine conversation despite constant digital connection (2015); drawing on research studies as well as interviews with technology users, Turkle argues that our interactions via digital technology today result in increased loneliness as well as decreased human empathy, intimacy, collaboration, and learning. Castells (2009) echoes these concerns, noting that the rise in communication within the Network Society could actually be a rise in more *superficial* communication. Outside Turkle's and Castell's work, concerns about young people, in particular, forming "electronic friendships" have circulated widely in public discourse, pinpointing a perceived risk of stunted social development as friendships and traditional activities like sports take a backseat to video games and web-based activities (Subrahmanyam, Kraut, Greenfield, & Gross, 2000).

Others laud digital technology for its positive social benefits. Howard Rheingold's ground-breaking ethnography-like investigation of early online social spaces, *The Virtual Community*, chronicled the rich social interactions that could take place in online spaces (1995); since then, Rheingold has advocated scholarly and educational communities to take virtual communities seriously as spaces for important social as well as democratic engagement (2012). Indeed, scholars have shown, for example, that the social interactions provided by online environments can be socially affirming for English language learners and immigrant children (Black, 2005; Lam, 2000, 2013) as well as marginalized youth and adults (Hull & Katz, 2014; Hull, Stornaiuolo, & Sahni, 2010), demonstrating support for this discourse in research.

Technology-as-threat and technology-as-benefit: Cognition and learning. These technology-as-benefit and technology-as-threat discourses also play out in terms of the impact of digital technologies on human cognition and learning. For example, in his book *The Shallows: What the Internet is Doing to our Brains*, Carr (2010) cautions that the hallmarks of the Internet—such as increased connection, speed, and interaction—may have negative consequences for how we think. Similarly, Greenfield's 2015 book *Mind Change* asserts that digital technologies threaten our very existence by exacerbating our worst cognitive capacities, such as mindlessness and addiction (Greenfield, 2015).

These concerns are echoed in conversations about educational institutions. Collins and Halverson, for example, summarize skeptics' primary concerns about digital technology in schools in the following way: digital technology "carries the risk of either reducing the rich variety of classroom teaching and learning to the most predictable forms of rote learning or perverting the learning experience in the interests of commercial media" (Collins & Halverson, 2009, p. 30). This threat discourse, in other words, points to concerns about the potential costs of "our brains on technology," such as reduced comprehension, productivity, reflection, and creativity; increased stress and anxiety; and lowered levels as well as quality of learning (Carr, 2010; Greenfield, 2015; Kern, 2015; Richtel, 2010).

Research studies used to support this argument are plentiful. For example, an oft-studied 2003 Cornell study showed that students who were allowed to multitask online during lectures performed worse on comprehension quizzes afterward than peers who were not allowed to surf the web (as cited in Oremus, 2015); in addition, Carr (2010) highlights a study in which the use of multimedia presentations did not improve student recall of content—and even resulted in poorer recall than students exposed to non multimedia presentations. On a more macro level, Richtel (2011) uses one school district in Arizona as an illustration of schools nationwide that have invested heavily in digital technology to support learning but whose test scores have not improved. There are, in other words, many studies as well as anecdotes used to support the technology-as threat to learning discourse.

This technology-as-threat discourse, particularly in terms of learning, is far from new. Indeed, Plato famously bemoaned the threats inherent in the written word, the learning technology par excellence, citing fears that students would lose the crucial ability to memorize information with the spread of mass literacy (Kern, 2015; Selwyn, 2011). Fast-forwarding a few millennia, this discourse has also been invoked for a range of different technologies in the 20th and 21st centuries, from the pencil to the typewriter (Baron, 2014).

Conversely, just as this "teknofear" in relation to cognition and learning has a storied history, so too does the technology-as-benefit discourse (Baron, 2009). Early computer scientist Douglas Englebart, for example, lauded the Internet and other digital tools as able to bolster human intellectual capacities (Wisnioski, 2015). In schools, Selwyn notes how four technologies— movies, radio, TV, and microcomputers—were each heralded as fixes to a range of learning problems in the 20th century (2011, p.58). More currently, medical doctor and researcher Gary Small of the UCLA Memory & Aging Research Center advocates for digital tools as a way to improve cognitive function among aging adults (Cavanaugh & Walsh, 2009); moreover, in the 2016 U.S. Department of Education report on technology, digital technology was positioned a "powerful tool for transforming learning" (U.S. Department of Education, 2016, p. 1), illustrating this discourse in relation to schools today as well.

As was the case with perceptions of technology-as-threat to learning, research also supports the idea that digital technology can support cognition and student learning (Clark, Tanner-Smith, & Killingsworth, 2013; Richtel, 2010; Taylor, 2012). For example, studies have found that heavy Internet users expand their neural circuitry more than novice users; that video game users have been shown to have improved reaction time and ability to discern amongst a lot of objects than non gamers (Richtel, 2010); and that people who play video games and who watch TV/movies have improved visual intelligence (Taylor, 2012). In addition, a meta analysis of 77 experimental or quasi-experimental studies on the effectiveness of digital games for learning found that digital games were more effective in terms of improving cognitive competencies than non-gaming controls (Clark et al., 2013). Digital technology, then, has been shown to support this learning and cognition facet of the technology-as-benefit discourse.

What is the role of technology? Related to the understanding of digital technology as a benefit to learning are the different ways in which digital technology can be used in education: in other words, functional discourses of technology in education. A first parsing is the use of digital technology in administrative tasks and classroom management (e.g., keeping track or and tabulating grades and attendance) versus the use of digital technology in instruction (Ware & Hellmich, 2014). Its use in instruction has been theorized in several ways. For example, Warschauer & Ware (2008) distinguish between three discourses of digital technology and literacy: learning, change, and power. The learning frame focuses on enhancing traditional learning outcomes, often through the goal of raising test scores. The change frame emphasizes how new technologies are transforming and challenging traditional conceptualizations of literacy and learning as well as looks to change the conservative nature of schools by valuing these non-traditional ways of making meaning. The power discourse also acknowledges that literacy and learning are in flux due to technological innovation but focuses on the practical relationship of literacy and technologies to social and economic power in education (Warschauer & Ware, 2008).

Kern (2011) distinguishes between three major metaphors or discourses of digital technology and language learning. First, technology as tutor sees digital technologies like computers or their related applications as taking on the role of the teacher in some way, such as

assessing learners' performance and providing feedback (p. 203). The second metaphor, technology as tool, emphasizes "individual learner capabilities" as well as their "cognitive goals and needs" (p. 203). Highlighted here is the access learners have via digital technologies to a wide range of learning resources, such as news, music, and video clips. The final metaphor, technology as medium, focuses on the agency of learners who communicate *through* technology, engaging in communicative practices that both align with and diverge from the practices taught in traditional educational settings (Kern, 2011).

Idealistic and utilitarian perspectives. Outside these specific pedagogical functional discourses, the use of digital technology has also been conceived within idealistic and utilitarian technology discourses. For example, Hull and colleagues (Hull & Stornaiuolo, 2014; Stornaiuolo, Hull, & Sahni, 2011) have investigated how digital technology can pave the way toward cosmopolitanism, as it has been theorized in relation to the current world (e.g., Appiah, 2007; Hansen, 2011). Specifically, they have identified how interactions online, through sharing profile pages and digital stories with international others on the Space2cre8 platform, can trigger situations in which young learners "imagine and enact morally and ethically alert selves" (Stornaiuolo, Hull, & Sahni, 2011, p.358) or learn to gauge and establish an ethical "proper distance" in relation to their audience (Hull & Stornaiuolo, 2014).

Conversely, digital technology has also been understood in utilitarian terms: it is the role of the society—and education more specifically— to prepare students for a world increasingly marked by digital technology by these technologies into curricula and practices (Collins & Halverson, 2009, p. 9). The accent within this discourse, then, is on digital technology as serving pragmatic preparedness goals. As was the case with the utilitarian discourse of language, the utilitarian discourse surrounding digital technology takes at least two forms. First, there is an economic bent that draws on "the long-established links between the needs of a country's economy and the nature of a country's school system" (Selwyn, 2011, p.23). In other words, this particular utilitarian orientation to technology is based on the premise that, with a knowledge and information society, the educational system must prepare the workers of tomorrow with "the technology-related skills required to work in the knowledge economy" (Selwyn, 2011, p.23).

Alongside seeing education and technology as vital to supporting national economic needs is the perception that technology in schools can bolster national security priorities. The imbrication of these two facets—utilitarian benefits of digital technology in terms of economic and national security—can be seen in the Council of Foreign Relations' 2012 Task Force on U.S. Education and Security. The report claims "that The United States' failure to educate its students leaves them unprepared to compete and threatens the country's ability to thrive in a global economy and maintain its leadership role" (Council on Foreign Relations, 2012, para. 1). The task force recommends, among other things, increasing support and expectations in relation to key subjects vital to economic prosperity and national security, including technology as well as language learning (Klein & Rice, 2012).

Summary. Taken as a whole, then, digital technology, like language, has been positioned in society and in education in a myriad of ways, with the ontological (what is technology?) often intertwined with the functional (what is the role of technology?). As was the case with language, layers of contradiction exist in these technology discourses. First, a contradiction stands between the perception of digital technology-as-threat and technology-as-benefit: seeing technology as a threat to social and cognitive development largely contradicts seeing technology as a benefit in these two areas. Moreover, given the role of digital technology as a primary driver globalization,

these two discourses suggest that globalization itself may be perceived simultaneously and contradictorily as a threat and as a benefit.

There are also potential contradictions in how and to what ends technology is used. Similar to language discourses, utilitarian and idealistic technology discourses are, at face value, contradictory: using technology to bolster economic and national security ends arguably stands in opposition to efforts to use technology toward the cultivation of idealistic or cosmopolitan beings. Interestingly, though, as was the case with language, globalization could fuel both utilitarian and idealistic approaches: the role of technology in globalization and the resulting interconnection could spur global competition and fear or bolster desires to communicate in meaningful ways with distant others.

In addition to utilitarian and idealistic contradictions, the different discourses of technology's use in education work toward different, juxtaposed ends: while the learning frame reproduces traditional ways of schooling, the change and power frames do not, challenging the status quo and repositioning the meaning of language, literacy, and learning. Similarly, the change and power frames as well as the tool and medium discourses emphasize student agency while a learning and tutor frame do not.

Finally, these discourses do not exist in a vacuum: rather, they are very likely co-present in individuals as well as in school communities. This simultaneity of digital technology discourses in combination with their potential contradiction sets the stage for tension between discourses and between the school actors who reproduce them.

Complex and Conflicting Discourses toward an Understanding of Global Education

Several conclusions can be drawn from this review of the discourses surrounding digital technology and second/foreign language. First, a range of different second/foreign language and digital technology discourses exist in the United States, illustrated in theoretical work, research, policy documents and school environments. Second, these discourses are often conflicting and contradictory. Thirdly and most importantly, however, these discourses do not exist in isolation from each other; rather, they exist simultaneously in policy documents at national and school-based levels as well as in the discourses articulated and embodied by individuals.

Returning to the ambiguity in global education that began this chapter, we can also identify a final conclusion: the discourses of second/foreign language and digital technology outlined above would build up dramatically different definitions and understandings of global education within global schools. Positioning second/foreign language in idealistic terms would point to understandings of global education moored in aspirations to understand other cultures and peoples while positioning digital technology as a benefit to learning might suggest an understanding of global education in more individualistic, human capital terms.

In other words, the ways in which second/foreign language and digital technology are understood and positioned within global schools would contribute to—and could ultimately reveal—how global education is understood: its goals and underlying motivations. With that in mind, the present study investigates the discourses that different school actors—teachers, administrators, parents, and students—within global schools use to position second/foreign language as well as digital technology as a way to illuminate the inner-workings of the global education movement as a whole and to clarify past ambiguities as well as tensions.

Theoretical Frame

This study addresses a range of moving and interconnected pieces: global and international schools from historical and contemporary perspectives as well as the different and at times disjointed discourses that different school actors use to position second/foreign language and digital technology. Furthermore, the larger context of globalization in which this study takes place—characterized by facilitated communication via information technologies and the increasing flow of people and ideas across borders—further underscores the importance of closely considering complexity. To respect this complexity and the interconnectivity of this terrain, I root my understanding of discourse as well as my subsequent research design and analyses within an ecological theoretical framework. In the sections that follow, I will summarize ecological theory as well as its application within the fields of applied linguistics and second language acquisition; discuss the application of five features of ecological approaches to discourse; enumerate how ecological theory has been deployed in discourse theory; and, finally, highlight limitations of other discourse approaches.

Ecological theory. Ecological theories, with roots in the hard sciences, set out "to explain the behavior of complex systems" that "usually involve a large number of elements or agents, which interact and give rise to a different order of complexity at a higher level" (Larsen-Freeman, 2013, p. 1). These theories have been applied to a range of different domains, including applied linguistics and second language acquisition where they have been positioned as a way to accommodate the disciplinary dichotomy between the two predominant theories of language and language learning: the psycholinguistic learner-as-computer model and the language socialization learner-as-apprentice model (Kramsch, 2002; Larsen-Freeman, 2002, 2011, 2013). Seen as a way to bridge these two models, the ecological metaphor looks to describe language, language users, and their environment as dynamically intertwined (Kramsch, 2002). Language is not perceived as an abstract, strictly rule-based codified system but rather as a socially- and contextually-embedded, a nonlinear, dynamic, and relational system that exists within nonlinear, dynamic, and relational systems.

While ecological theories have most often been applied to language and language acquisition, I propose to look at discourse, articulated primarily through language, from an ecological perspective. Specifically, I will draw on five features of an ecological approach and apply them to discourse: multiplicity; complex systems; nonlinearity and relationality; hierarchies of organizational levels; and timescales. I will first explain these features in detail as they have been theorized in relation to language and language learning; next, I will discuss how these features have been addressed in discourse theory more broadly.

At the heart of an ecological perspective is the notion that systems—from bee colonies to classrooms— are *complex*, constituted by *multiple* agents and artifacts (Kramsch, 2002; Larsen-Freeman, 2002, 2013; Lemke, 2002); in the example of a classroom, there are the students, yes, but also the teachers, friends, parents as well as textbooks, teaching materials, pedagogical policies, etc. Moreover, it is the *nonlinear relationality* between these different agents and artifacts that characterizes the system: rather than a one-to-one cause-effect relationship, the interaction of the different agents and artifacts within the system creates dynamic and unpredicted effects (Kramsch, 2002, p. 16; Larsen-Freeman, 2013, p.1); the learning that takes place in a classroom, then, is not the direct result of the material presented to a student in that classroom but is filtered through the interaction of a myriad of things, such as the student's social background and the teacher's pedagogical training. Moreover, the different pieces at work in the unfolding of a particular effect are not circumscribed to one context; rather, there is a *hierarchy*

of organizational levels in which higher organizational levels impact lower levels (Kramsch, 2002; Lemke, 2002). In the classroom example, the classroom is circumscribed within and impacted by a larger system—other classrooms and grade levels within school as well as the local state, national, and international educational systems and policies. Finally, the relationality and interaction across levels not only takes place in the present, but also with reference to the past and in anticipation of the future—across different *timescales* (Kramsch, 2002; Lemke, 2002); our single classroom, then, is influenced by past educational contexts—perhaps the debate between progressive and traditional educational models—as well as by the anticipation of what education or the world itself will be like in the future.

Taking these features into account, an ecological approach to discourse would acknowledge the *multiplicity* of discourses present within a particular system and would see their *complex* interaction as important to understanding the discursive position that individuals take up; moreover, this perspective would situate the different discourses taken up by individuals within a *larger hierarchy of levels*, impacted in *non-linear* ways by larger levels at the local, national, and international scales, as well as by *past-present-future timescales*. In sum, from an ecological perspective, the discourses of language and technology that individuals reproduce, which in turn will shed light on understandings of global education, would be seen as multiple, emerging from complex relationships between different scales in time and space.

Ecological approaches to discourse. It is important to note that the features of an ecological perspective cited here have also been theorized within discourse theory more specifically. In this section, I will explore the ways in which discourse theory intersects with an ecological approach.

As mentioned above, I understand and use *discourse* from a post-structuralist, Foucauldian perspective: in contrast with the standard definition of discourse as linguistic phenomena beyond the sentence as well as with structuralist understandings that interpret a strict hierarchy of discourses, a Foucauldian perspective understands discourse as how meaning is made and organized through semiotic systems like, but not restricted to, language (Pennycook, 1994, p. 128). Three important pieces are to be noted here in relation to the study that follows. First, discourse from a Foucauldian perspective is never singular, but rather always multiple within a society. Second, drawing on Foucault's discourse theory also introduces the notion of *power*, an often under-theorized element in an ecological frame: rather than perceiving power from a structuralist, top-down domination perspective, Foucault underscores that "power is not something that is acquired, seized, or shared, something that one holds on to or allows to slip away" (Foucault, 1978, p. 94); rather, it is exercised, not held, by competing discourses. Third, while language may be a common focus when analyzing discourse, the discourse perspective taken here also extends beyond language to include other semiotic systems—for example, discourses can be both articulated through language but also embodied through actions (Gee, 1996, 2012; Martínez et al., 2015). From this perspective, then, the discursive system is a complex and relational one, with many discourses circulating and competing to assert their way of meaning-making.

Blommaert's work on discourse, which at times draws on Foucault, also encompasses elements of ecological theory. Blommaert sees discourse as semiosis or "meaningful symbolic behavior" (Blommaert, 2005, p. 2). In reaction to critiques of critical discourse analysis (CDA) that focus on this approach's lack of historical contextualization, Blommaert puts a particularly strong accent on discourse as seen in connection to history and historical patterns of use; in this way, Blommaert calls attention to the importance of timescales in analyzing and understanding

discourse, aligning, then, with ecological approaches. In addition, Blommaert faults CDA for biased interpretations, highlighting CDA's orientation toward relations of dominance that fail to account for multiple readings or dialogic interpretations. Similar to Foucault, then, Blommaert is encouraging a more nuanced, complex understanding of discourse that moves beyond top-down understandings toward a more relational, complex accounting of discourse. To do so, Blommaert advises an approach to discourse that engages with context, rather than just text, to understand how people "make sense socially" (p.43); that factors in the dialogical, relational nature of context and contextualization in meaning-making; and that expands notions of context to include the immediate event as well as wider, historical context. Blommaert, then, encourages an approach to discourse that incorporates complexity, relationality, and timescales.

These elements of ecological theory as well as additional ones also come up in Blommaert's discussion of language in a changing world (2010). While this work is focused primarily on mobile, global linguistic resources, rather than discourse more broadly, it is possible to draw a connection based on discourse's frequent manifestation through language. For example, Blommaert advocates thinking about language in terms of *scales*: vertically-organized "'levels' or 'dimensions' at which particular forms of normativity, patterns of language use and expectations thereof are organized," (p. 36) across Time (ranging from momentary to timeless) and Space (ranging from local to global). In other words, scales work to index or activate particular frames in which communication norms as well as discourses are organized. In the same vein as hierarchy of organizational levels, then, we can think of the spatial scales in an educational context as ranging from individual classrooms situated in a particular socio-cultural-historical context to the translocal national or global.

Blommaert (2010) makes an important addition to this component of ecological theory, though: Blommaert points out that the vertical layering implied by the term "scales" is not as simple as spatial orientation: scales not only differ in communicative norms but also in terms of power, authority, and distribution. That is to say they are spatially stratified and therefore power-imbued. We come to see hierarchy of organizational levels, then, as intimately linked to power: while the complexity and relationality between scales or levels remains, Blommaert points out the importance of noting the power differentials within these levels or scales and how those differentials impact discourses and language use.

Related to power-imbued scales are *orders of indexicality*, defined as "metapragmatic, organizing" principles (Blommaert, 2010, p.37) that "produce social categories, recognizable semiotic emblems for groups and individuals, a more or less coherent semiotic habitat" (p.38). Like scales, these orders are stratified and valued—some with more or less power, better or worse connotations. This means then that orders of indexicality are also "patterns of authority, of control and evaluation and hence of inclusion and exclusion *by real or perceived others*" (p.38, original italics). That is to say that orders of indexicality are different organizing systems of normativity that vary with scale and with different values placed on language/semiotic resources as well as discourses. To illustrate with an example, the more informal discursive orientations on the school playground versus the more formal discursive orientations of a school board meeting become indexical patterns that link into and denote different hierarchically-organized social categories. Here again, then, we come to understand the complexity, relationality, and hierarchy of organizational levels of discourse as linked to power: some discourses are linked to more powerful scales, levels, or social categories while others index lower, less powerful scales and social categories.

Despite the stratified—and therefore power-imbued—nature of scales and orders of indexicality, the term *polycentricity* acknowledges the fact that even on a single scale "multiple normative complexes are simultaneously at work" (Blommaert, 2010, p. 61)—that is to say that within a global world there are now multiple centers of authority and reference that regulate norms. Blommaert points out that polycentricity has always been a key feature in social interactions: even within interactions that might appear to adhere to a single center of authority, "there are as a rule…batteries of norms to which one can orient and to which on can behave" (p.40). That said, the processes of globalization have multiplied not only the connections between disparate parts of the world but also the centers of authority and reference, strengthening the presence and power of polycentricity as a conceptual tool. Here again, the notion of complexity—and specifically the notion of increased complexity via more agents and artifacts due to globalization—comes through; moreover, acknowledgement of multiple centers of authority through polycentricity opens possibilities for interactions and analyses that do not follow traditional tropes of one social group or discourse holding ultimate sway and influence in a social space.

Rationale for an ecological approach. The rationale for an ecological approach to discourse that opened this section is bolstered when comparing it to other approaches. Most prominently, other models do not adequately account for the complexity of the current context, offering unsatisfying approaches undergirded by problematic assumptions. Cognitive approaches, for example, would consider language and discourse to be the direct result of available input, appropriated fully by individuals as if they were downloaded by machines; this approach does not recognize the myriad of factors that could influence how discourse is taken up. Similarly, structuralist and Marxist frames assume a distinct order and direction of relationships within a given system, leaving out the possibility of dynamic influences within and across systems that moves beyond a dominator-dominated approach.

In juxtaposition, ecological approaches allow for more substantive, nuanced analyses that are not rooted in a priori assumptions but that permit complex relationships to emerge. More specifically, the use of an ecological approach allows for a project design and subsequent analysis that take into account the multiple and moving pieces at work: the different discourses of technology and language; the historical and contemporary manifestations of the global education movement; the different school actors; and the impact of local, national, and international forces. In other words, an ecological approach is well-suited for the current endeavor, accounting for the multiple interactions taking place between individuals and the multiple institutional and non-institutional environments and factors that may influence their orientations to language and digital technology within a globalizing world.

Research Questions

This study, then, sought to answer the following questions:

1. How do school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through discourse?
2. How do these positionings align or conflict across groups?
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?

Organization of the Dissertation

This dissertation is divided into four parts. Part I began with the Preface and this current chapter (Chapter 1), where I mapped out the complex terrain surrounding second/foreign language, digital technology, and global education today to be investigated by the research questions. I conclude Part I in Chapter 2, discussing the two-pronged project that I designed to help answer these research questions: an online survey distributed to a broad range of secondary schools around the United States as well as an in-depth case study of one secondary school in the western United States.

Part II and Part III respectively focus on the two focal components of global education and of this dissertation: second/foreign language (Part II) and digital technology (Part III). In Part II, I begin by examining the larger swatch of second/foreign language discourses that were found at the survey schools in Chapter 3. This provides a point of contextualization for the subsequent analysis of the second/foreign language discourses found at the focal school in Chapter 4. Similarly, I begin Part III by discussing the major trends in discourses of digital technology found amongst the survey school respondents in Chapter 5. This discussion provides a contextualizing backdrop to the in-depth analysis of the digital technology discourses reproduced at the focal school in Chapter 6.

I conclude this dissertation with implications and conclusions of the present study in Part IV, including recommendations for teaching language and technology in today's global world.

CHAPTER 2: PROJECT DESIGN

Introduction

To investigate the complex and often ambiguous global education terrain sketched out in the last chapter, I employed two complementary approaches: an online survey distributed to a broad cross-section of schools around the United States and an in-depth focal case study comprised of interviews, observations, and document collection at one global school located in the western US. In what follows, I first discuss this research design before moving to detail the research settings in which this design was deployed as well as my role as researcher within those settings. I then provide an in-depth discussion of the methods used for data collection and analysis.

Research Design

The overarching research questions that guided this work were:

1. How do school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through discourse?
2. How do these positionings align or conflict across groups?
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?

In keeping with the theory of discourse discussed in Chapter 1, I looked closely at how second/foreign language and digital technology were *perceived* (articulated discourses) and *used* (embodied discourses). Figure 2.1 depicts the conceptual mapping of the research questions.

Figure 2.1. Research Questions Concept Map

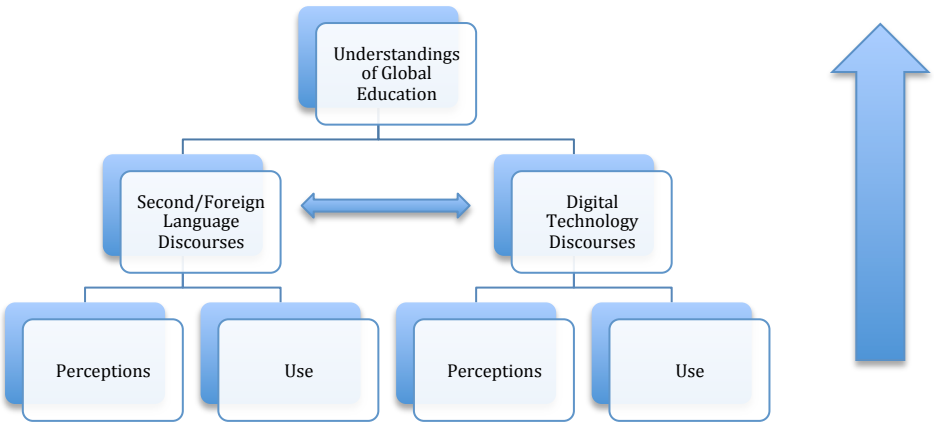


Figure 2.1. This figures lays out the conceptual mapping of the research questions and the project as a whole: the relationship between the perceptions and uses of both second/foreign language and digital technology—or the articulated and embodied discourses—that build up and ultimately reveal understandings of global education.

This leads to a more detailed set of research questions that guided the project design:

1. How do school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through discourse?
    a. How do school actors position second/foreign language through embodied and articulated discourses?
    b. How do school actors position digital technology through embodied and articulated discourses?
2. How do these positionings align or conflict across groups?
    a. How do positionings of second/foreign language through discourse align or conflict across groups?
    b. How do positionings of digital technology through discourse align or conflict across groups?
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?
    a. How do these understandings impact second/foreign language teaching, digital technology teaching, and learners?

Given the layered, relational, and complex terrain of inquiry, I selected an embedded case study research design to investigate these questions. This design allows the researcher to examine sub-units of analysis within a given case and, importantly, their relationships (Yin, 2003). In the current project, this equated to the examination of second/foreign language as well as digital technology discourses for different individual school actors, the larger subgroups within global schools (parents, students, teachers, and administrators), and the global schools themselves. Figure 2.2 illustrates this design.

Figure 2.2. Embedded Case Study Design Model

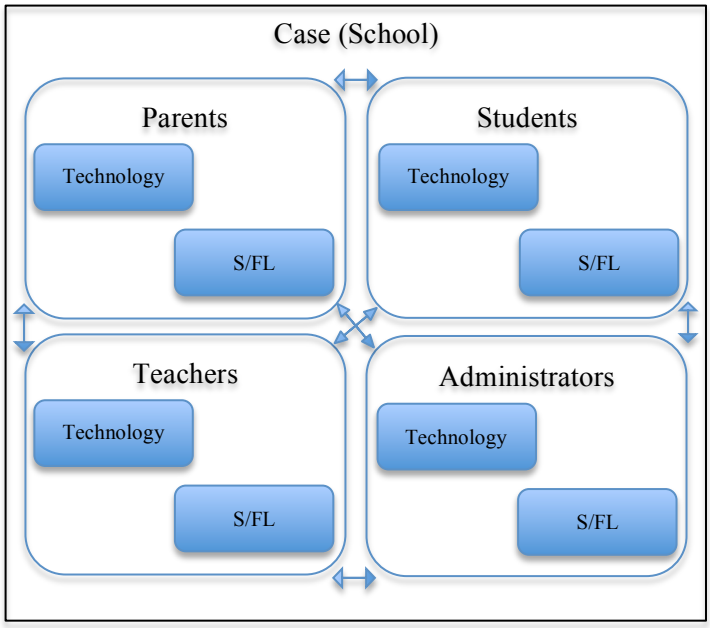


Figure 2.2. This figure depicts the embedded case study design used in the different research settings, illustrating most prominently how the relationships between different school groups within a case or school are emphasized. S/FL stands for "second/foreign language."

I applied this design to two complementary approaches: an online survey distributed to a broad cross-section of global schools around the United States and an in-depth one focal school located in the western US. The survey was used to identify discourses of second/foreign language and digital technology reproduced by a larger spread of global schools and global school actors in the United States and, as a result, to provide contextualization for the focal school investigation. The focal school context was designed as an opportunity to gain in-depth understanding of how one global school and its school groups positioned second/foreign language and technology with its global frame. The following table summarizes the detailed research questions, research context, and methods of data collection/analysis.

Table 2.1.

Summary of Research Project

Research Question	**Survey**		**Focal School**	
	Data Collection	*Data Analysis*	*Data Collection*	*Data Analysis*
1. How do school actors respectively position second/foreign language and digital technology through discourse?	• Survey questions • Document collection	• Critical discourse analysis • Descriptive statistics	• Semi-structured interviews • Participant observation • Document collection	• Critical discourse analysis
2. How do these positionings align or conflict across groups?	• Survey questions • Document collection	• Critical discourse analysis • Descriptive statistics	• Semi-structured interviews • Participant observation • Document collection	• Critical discourse analysis
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?	• Survey questions • Document collection	• Critical discourse analysis	• Semi-structured interviews • Participant observation • Document collection	• Critical discourse analysis

Some Definitions

Before discussing the details of each research setting, I first lay out the criteria for participation and some initial categorizations based on school type as well as language and technology models.

Global school definition. At the time of the study, there was no unified way of defining a global or international school or education nor were there any official accreditation procedures for schools that wanted to identify themselves as "global" in the United States. In lieu of this, many schools sought curricular or institutional accreditation, such as through the International Baccalaureate Organization (IBO) or the Council of International Schools (CIS). However, not all schools that identified as providing students a global or international education used these accreditations. For the purposes of survey and focal school selection, then, I defined "global school" as schools that have integrated the global or international into their schools in at least one of the following ways:

1. Citing global or international learning, understanding, and perspectives in mission or vision statements
2. Providing global citizenship or learning programs to students
3. Using international education accreditations or curricula, such as the Council of International Schools accreditation or the International Baccalaureate programs

Many of the schools in the project demonstrated all three of these criteria while some had only one or two.

Global school typology. In selecting schools for participation in the study, I looked to reflect and include the different kinds of global schools that have been identified in the literature (Hayden, 2011; Hull & Hellmich, in press; Parker, 2011; Sylvester, 1998); while a representative sample was not targeted (or achieved), this choice was meant to create the big picture comparison and contextualization that the survey component of the study provided in the research design. I distinguished between global school type as well as language and technology model. In terms of global school typology, I distinguished between three types of global schools: *Established Global Schools*, *New Global Schools*, and *Traditional International Schools*. Established Global Schools were defined as schools with a global focus that had been in existence for at least 20 years. New Global Schools were defined as global schools that had been established within the last 20 years or schools that had established globally-focused programs within the past 20 years. Traditional International Schools were delineated as schools that teach a foreign state's curriculum and educational standards; none of these schools participated in this study.

Language & technology models. In addition to global school typology, I also categorized schools based on their language and technology programs as well as policies. In terms of language, I distinguished between *Immersion Models*, *Foreign Language Models*, and *Mixed Models*. Immersion Models integrated language learning throughout the school day while Foreign Language Models taught language in separate classes. Mixed Model schools incorporated both immersion and foreign language models, depending on the level; for example, a common structure, seen at the Aurelius International School, was to have immersion education at pre-primary and primary school levels, which transitioned to a foreign language model later in primary school or in middle school.

In terms of digital technology, I distinguished between four different technology policies: *BYOD*, *1:1*, *As Needed*, and *Unknown*. A Bring Your Own Device (BYOD) policy asked families to provide students with a particular kind of computer or iPad. 1:1 policies provided students with a particular kind of computer or iPad. As Needed policies stipulated that some digital technology would be provided at the school itself but not for every student. Finally, an Unknown designation was reserved for schools that did not give detail on their technology policy.

Research Settings

The project design included several research settings: a broad cross-section of schools around the United States (survey) and one global school located in the western US (focal school). What follows is a detailed description of these settings meant to adequately take into account the layered contexts that constitute the schools themselves, in line with the ecological theoretical framework that guided this work.

Survey schools. Survey schools were located around the United States and differed in a variety of ways (see Table 2.2, 2.3.) Below, I describe the schools in terms of location; grades served; features that define it as a global school in this project; and language as well as technology policies and offerings. Descriptions are based primarily on information gathered from school documents available on the Internet.

Table 2.2.

Snapshot of Survey Schools

School[4]	**Location**	**Public v. Private**	**Grades**	**Total Students**	**Total Secondary Students**
Aurelius International	Southern US	Private	pK-12	1600	840
Global Studies Prep	Western US	Private	9-12	450	450
International Studies Charter	Western US	Public	K-8	420	150
Midwest International	Midwestern US	Private	pK-12	600	320
Trinity Preparatory	Northeastern US	Private	9-12	200	200

Aurelius International School, located in the southern US, was established in the 1950s. The largest school in the sample, Aurelius had approximately 1600 students, grades preK-12. At the secondary level, it comprised both an international track (international baccalaureate or IB diploma) as well as a French track (French baccalaureate diploma). The immersion language model of the primary school transitioned into a foreign language model at the secondary level, with a range of language offerings; French, Mandarin, Arabic, Spanish, and Latin were staples of the curriculum, but the school also cited additional languages (e.g., German, Portuguese, Japanese) depending on the number of students requesting those languages. The school held a BYOD policy at the secondary level, which had replaced a 1:1 laptop checkout program in the early 2010s.

[4] All school names are pseudonyms.

Global Studies Prep, located in the western US, was a private high school serving a racially- and economically-diverse student body. The school had established an international program as well as a global citizenship program within the last 10 years. The international program allowed international students to attend the school for 1-2 years; the majority of students for the past few years had been from China, but other students hailed from places like Brazil, Germany, and Nigeria. The global citizenship program was centered on school diversity, both local and international; enrichment opportunities, such as invited speakers and international volunteer experience; and language learning. Languages offered at the school itself were French and Spanish in addition to an English as a Second Language course for international students. The school had a 1:1 iPad technology policy until 2015, when it transitioned to a BYOD model.

The International Studies Charter School, located in the western US, was established in the early 2000s as an internationally-focused public charter school offering the IB curriculum. The K-8 school had students from diverse economic, educational, racial, and linguistic backgrounds. In terms of language, the school offered Spanish as a foreign language. In terms of technology, the school held a BYOD policy for secondary students, with school devices available for students who did not have access to a personal device; it also required secondary students to have a Google Apps account, though which many classroom activities were reported to be organized and executed.

The Midwest International School, a preK-12 school established in the early 1990s, offered an IB curriculum to students in the central United States. At the lower levels, the school offered language immersion, transitioning to a foreign language model with French, Spanish, and Mandarin at the secondary level. Midwest International had a 1:1 Apple laptop policy for all middle and high school students; parents were required to pay for the laptops, and the school installed the software used in the school.

Trinity Preparatory was a private high school located in the northeastern United States. Established more than a century ago, it integrated a global focus into its mission and vision in the early 2000s through, among other things, the International Baccalaureate as well as a global studies and travel program. The school offered French, Spanish, Mandarin, and Latin to students through a foreign language model. No specific technology policy was identified, but technology figured into the curricular architecture of the school, positioned there as a tool for the sciences.

Table 2.3.

Project-Specific Details on Survey Schools

School	**Global Schools Type**	**Language Type (Secondary)**	**Languages**	**Technology Type**
Aurelius International	Established	Mixed (Foreign)	French, Mandarin, Arabic, Spanish; Latin	BYOD
Global Studies Prep	New	Mixed	French, Spanish, English	BYOD
International Studies Charter	New	Foreign	Spanish	BYOD + As Needed
Midwest International	Established	Mixed (Foreign)	French, Spanish, Mandarin	1:1
Trinity Preparatory	New	Foreign	French, Mandarin, Spanish, Latin	Unknown

Focal school: The World First School.

The school. The World First School (TWFS) was located in a large, densely-populated city in the western US. TWFS was founded in the early 1990s by Lisa, who was still the Head of School at the time of the study. The school served approximately 200 students, pre-primary through Junior High.

TWFS was a private school. For the school year (September-June), tuition for Elementary and Junior High was $25,000. With such a price tag, many of the parents who choose the school were middle- to upper-class professionals. In addition to these families, the school supported teachers and staff by offering their children a place at the school for free. The school did offer financial aid, but it was often limited.

In serving its student body, the school cited its Montessori approach and language programs as central features to its model. Firstly, the Montessori approach was a defining frame for the school. On the whole, this educational philosophy focuses on respect for each individual child's development; hands-on learning style; structured, spiral-based curricula that emphasize connections across disciplines; critical thinking and inquiry; outdoor education; respect for different learning styles; and learning how to learn (Lillard, 2005). Almost all of the teachers at the school had been trained or were being trained in the method.

A second central component to the TWFS school model was its language immersion program. This immersion model worked in the following way: each class was team-taught by a set of educators who shared teaching responsibilities. Each teacher conducted lessons in the different core subjects to small mixed-aged groups throughout the week. Different than typical team-teaching, however, was that each teacher in the classroom communicated with the students in only one of the three languages offered—French, English, or Spanish—while their co-teachers spoke to the students in one of the other languages. Conversely, students were only supposed to communicate with teachers in that teacher's designated language. In this way, the students at TWFS received instruction in, were exposed to, and communicated in two or three of the school's languages throughout the school day.

The language offerings differed based on age level. At the elementary school level, students had fully integrated trilingual immersion: each classroom had three teachers—one who spoke English, one who spoke French, and one who spoke Spanish—and all class content was taught in the three languages. At the Junior High level, there was not full language integration; rather, the students had compartmentalized French and Spanish lessons every week with the designated French and Spanish teachers from the Upper Elementary classroom, but there was only one classroom teacher, Sophie, and content was primarily taught in English.

The school assumed an As Needed technology approach. Digital technology was introduced at age six or at the beginning of the Lower Elementary group. The school did not have a computer lab, but some classrooms had one communal computer. The Upper Elementary also had a set of Alpha Smarts to support students' acquisition of keyboarding skills. Some students had personal laptops to help support their learning differences.

The classrooms.

Upper Elementary. The school's classrooms and offices were distributed across several buildings. Both the Upper Elementary and Junior High shared part of one classroom building, a multi-level house. The Upper Elementary classroom took up the majority of the bottom level of this house. It was a large, open space broken up into several different areas. At the entrance to the classroom was the main area. Two smaller back rooms stemmed off to the right of the main area.

Also branching off from this main area were several rectangular child-sized tables that fanned back away from the entrance and into the kitchen area where weekly cooking took place. On the other wall perpendicular to the kitchen area was a computer station.

These rooms could best be described as multi-purpose, catering to different kinds of activities throughout the day. For example, the main area was often used as a workspace, with students spreading out on the floor with books and materials. That said, different academic lessons were also given here. Finally, this space was also used as a lunchroom, students enjoying and sharing meals brought from home or meals prepared by their fellow students.

The walls of these various rooms were lined with different posters and pictures in the school's different languages (English, French, Spanish). In the kitchen, for example, there was a chart of the classroom guidelines in English, a poster on *angúlos* [Spanish, angles], and a student-made booklet on *les quadrilaterals* [French, quadrilaterals]. On the walls in the teachers' work area were charts of student responsibilities for each day (e.g., trash, compost, cleaning stations, cooking) and one copy of the week's schedule, both in English.

In addition to being surrounded by multilingual walls, the students were always surrounded by a range of educational materials: all the rooms were lined with bookshelves, cupboards, and stations of different heights and purposes. The main room contained shelves that held student cubbies and their school materials as well as a lower set of shelves closer to the kitchen that held different sets of blocks in varying colors, shapes, and patterns. The two back rooms had tall shelves with books of all kinds—dictionaries, encyclopedias, math textbooks, novels—in all three of the school's languages. The kitchen shelves, both tall and short, contained everything from educational materials to books to cleaning supplies to science equipment. On one of these kitchen bookshelves was a small but important bell; this bell was used by teachers and students alike to get the attention of the class and to make announcements.

Digital technologies were also present in the classroom alongside print technologies. There was one shared class computer where students could consult the Internet or check their email. There was also a woven bin beneath the computer that held the class's set of Alpha Smarts, a handheld device used to do word processing and to practice typing. A few students had their own computers in the classroom; these peppered tables and work areas. Students with computers had been given special permission to have them in class due to learning differences.

The different times during which students engaged with these different technologies were determined by the complex weekly classroom schedule. A recreation of a portion of that schedule can be seen below:

Figure 2.3. Weekly Schedule in the Upper Elementary Classroom Excerpt

<table>
<tr><th colspan="3">Wednesday</th></tr>
<tr><th>Anaïs</th><th>Carlos</th><th>Ella</th></tr>
<tr><td><u>10-10:45</u>
Puissance [powers]
-Sara, Daniel, Meagan, Nira</td><td><u>10-10:45</u>
Mapas [maps]
-Alexa, Chloe</td><td rowspan="2"><u>10-11</u>
Book Report Meetings
-Sheila, Maria</td></tr>
<tr><td><u>10:45-11</u>
Fractions décimales [decimal fractions]
-Dalton</td><td><u>10:45-11</u>
Biblioteca [library]</td></tr>
</table>

Figure 2.3. Recreated excerpt from the Upper Elementary calendar. Posted on a central wall in the classroom, the schedule was the heart of daily activities and movements in the classroom. The schedule was divided by teacher (Ella, Carlos, and Anaïs) and further divided by activity or lesson. Students' names were placed underneath the activities in each time block.

For each day of the week, the morning and afternoons were divided up by each of the three classroom teachers who worked with different groups of students on different topics. For example, looking at the Wednesday morning schedule (Figure 2.3), one teacher, Ella, consulted with two students on a big report in the kitchen area from 10-11am; simultaneously, Anaïs, the French teacher, gave back-to-back math lessons in one of the back rooms: the first in multiplying powers to a group of four advanced students; the second in decimals to one student who faced challenges in mastering more basic concepts. The third teacher, Carlos, worked with a group of students on their resource and topography maps in the main classroom area and then took a group to the local library.

This schedule and general classroom description underscore several things; first, curriculum at TWFS was rooted in small workshops that catered to each student's individual content knowledge level. Second, movement was the defining feature of these classroom spaces; students and teachers shifted in and out of different lessons and work time throughout the school day. Third, at any one time, there were several different events going on within the classroom space. Moreover, specific lessons in subject areas like math and science took place at different times, with different groups of students, and with different teachers; subsequently, these lessons took place in different languages throughout the week.

To further illustrate not only the dynamic nature of this classroom environment but to explain in more detail the linguistic layer of that environment, Figure 2.4 illustrates one moment from the Upper Elementary classroom:

Figure 2.4. Linguistic Map of Upper Elementary Classroom

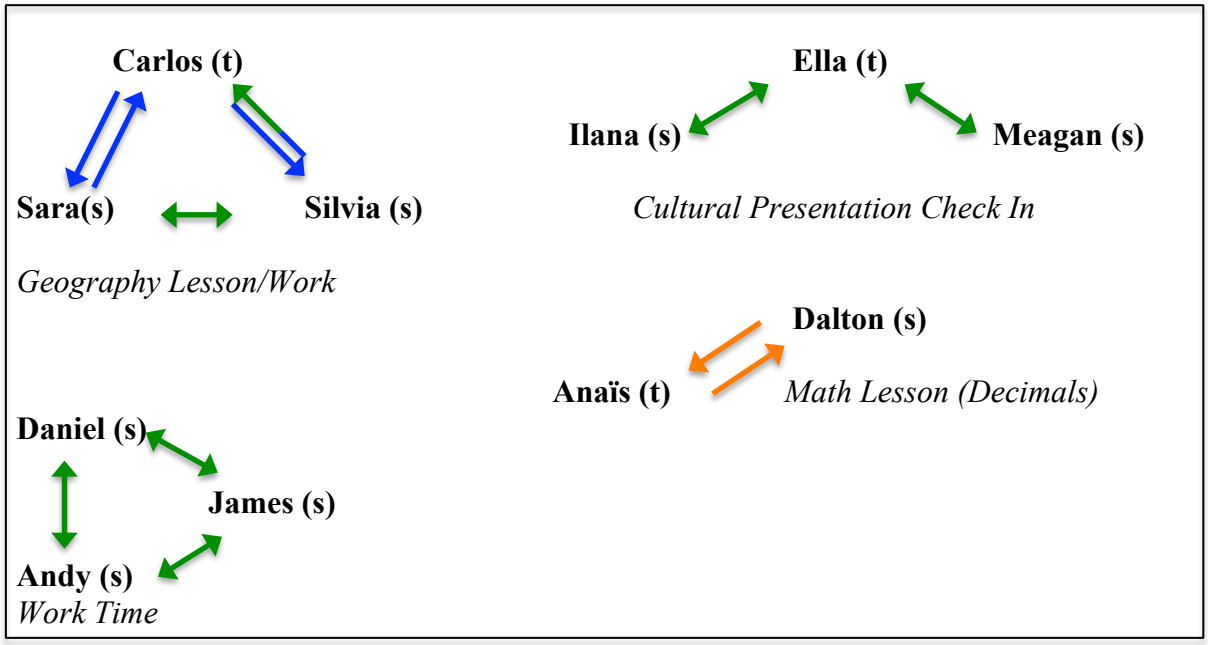


Figure 2.4. This linguistic map demonstrates how languages were used in the Upper Elementary classroom. Role is indicated in parentheses: teacher (t) and student (s). Languages are indicated in color: English, French, Spanish. Activities are indicated in italics: *work time*, *math lesson*, *check in*.

This illustration underscores how each teacher embodied one of the school's three languages (English, French, and Spanish) and spoke only that language with the students. Furthermore, this illustration reinforces the dynamic and complex classroom environment described above. We will return to this figure and what it depicts in terms of student language use in the following chapter.

Junior High. Directly above the Upper Elementary classroom was the Junior High space. It was much smaller compared to the Upper Elementary—only two rooms which comfortably accommodated the small Junior High class of five students. The first of their rooms contained a small kitchenette (refrigerator, sink) and a living room-like area with a large couch that faced a set of low shelves with books, movies, and plants. This shelf acted to divide the space in two, with a small workspace consisting of a rectangular table and chair pushed up against the window.

The second room acted and looked more like a classroom area. Separated from the first by an open door, it contained a small table, not unlike a dining room table, with anywhere between five and nine plastic chairs encircling it. The right side of this room had tall, black bookshelves filled with books, a globe, potted plants, and organizers of office supplies. Across from the bookshelves was a whiteboard. A computer station was set up perpendicular to this whiteboard, across from the windows and door. There was also a single computer station in a little inlet—perhaps originally a closet—near the bookshelves.

The Junior High was similar to the Upper Elementary classroom in several ways. First, these two rooms were built and used for a range of purposes. Informal class gatherings as well as mealtime at the Junior High level took place both on the couch in the common space as well as in the more formal classroom space. The designated language classes for the Junior High students as well as more formal class meetings, such as the one where I was introduced to the class, took place primarily in the classroom space. Work time for all class activities, on the other hand, spanned the classrooms space, the common room, and the outside deck.

Another similarity between the Junior High and Upper Elementary spaces was the presence of educational materials in the classroom. Books filled the bookshelves alongside different pieces of science equipment and math materials. The school-provided computer stations were also similar to the Upper Elementary classroom.

Unlike the Upper Elementary, however, the Junior High students were also allowed to bring their own personal computers or tablets to class. This tied into the more advanced work and research being done as a part of the curriculum. While not all students took advantage of this rule, the majority did, making laptops and their use a more prominent feature of the Junior High classroom.

An additional distinguishing feature of the Junior High classroom was the language model. In contrast to the immersion model used in the Upper Elementary, the Junior High was taught primarily in English and had compartmentalized language classes: both Anaïs and Carlos came to the Junior High classroom to give directed lessons in French and Spanish language. Students from the Upper Elementary with advanced language skills attended these classes as well.

A final distinguishing feature of the Junior High classroom was its organization largely around a year-long research project. Students would choose a topic interesting to them in consultation with Sophie, the Junior High teacher, the summer before and would spend the year researching and developing both a written research paper and a presentation. Students were asked to complete a project in each of the school's three languages (one per year of middle school).

The participants. With an idea of the focal classroom spaces in mind, I turn now to a description of the different individuals who participated in the study. Participants are described generally (name,[5] age, position, time at the school) as well as with regard to language and digital technology backgrounds. In terms of language, I detail languages spoken, fluency in those languages (fluent, advanced, intermediate, basic, novice), and the primary language used with students. In terms of digital technology, I identify self-reported relationship to digital technology (glossed as basic, intermediate, and advanced) and types of digital technologies used.

Administrators. Both the Head and Assistant Head of School participated in the study. As noted above, The World First School's current and founding head was Lisa; she has been with the school since its establishment. Originally from South America but raised in Europe, Lisa spoke multiple languages: English, Spanish, French, and Italian. Lisa reported using some technologies in her personal life—to communicate with non-local friends and family as well as to facilitate a busy life—but claimed her computer to be an essential component of her work life. TWFS's Assistant Head of School, Rosa, had been at the school for nine years. Raised in Central America and educated in bilingual schools, Rosa spoke Spanish and English. Rosa cited using digital technology as a part of her job—primarily email—in addition to texting and Skyping with family in other parts of the world.

Table 2.4.

Administrator Summary

Name	**Title**	**Age**	**Years at TWFS**	**Primary Language Used with Students**	**Other Languages Spoken (level)**	**Digital Technology Knowledge**
Lisa	Head of School	60s	23	English	Spanish (fluent), French (fluent), Italian (fluent)	Basic-Intermediate
Rosa	Assistant Head of School	Late 50s	9	English	Spanish (fluent)	Basic

Teachers. Four teachers participated in the study: all three teachers from the Upper Elementary (UE) focal classroom (Anaïs, Carlos, and Ella) and the one teacher from the Junior High (JH) focal classroom (Sophie). In the Upper Elementary classroom, there were three teachers, each of whom spoke one of the school's three languages (English, French, and Spanish) with the students. The English teacher in the Upper Elementary classroom, Ella, was a native of

[5] All names are pseudonyms. Teachers and administrators at TWFS went by their first names; as such, all participants are referred to by first names throughout the study.

the western United States in her early 30s. During the study, Ella was in the middle of her second year at TWFS. She often referred to herself as an English monolingual, although she had taken languages in college and in high school; she was also using online applications (DuoLingo) to refresh her Spanish at the time of the project. Ella described herself as "old school" when it came to digital technology; she did not use digital technology in her teaching, but she did report using social media and different apps to organize her personal life.

Carlos was the Spanish teacher and was in his fourth year of teaching at TWFS. Originally from Latin America, Carlos moved to the United States as a teenager when he began learning English. In addition to English and Spanish, Carlos had taken a semester of Italian in college and was learning French via Rosetta Stone. In terms of digital technologies, he described himself as a former gamer and someone who "loved" digital technology, particularly the Internet.

The French teacher, Anaïs, had been at the school for ten years. Originally from France, Anaïs had studied English all the way through university and graduate studies but had decided that teaching her native language in a bilingual, Montessori environment suited her over teaching English or French as a Foreign Language. After a problem with a visa, she had taught her lessons virtually from France for two years; outside that experience, though, Anaïs did not report extensive usage of digital technology in her personal or professional life.

While the elementary classrooms were team taught, the Junior High was taught by one teacher, Sophie, who had been at the school for nine years. She began at the elementary level, setting up the first fully immersive and integrated classroom before launching the Junior High program the previous year. Sophie spoke multiple languages: English, Spanish, French, Portuguese, and some Hungarian. Sophie used several digital technology platforms in her teaching and in her own professional development. Personally, she described herself as "cautious" around technology use, citing the use of an eReader and limited texting.

Table 2.5.

Teacher Summary

Name	**Classroom**	**Age**	**Years at TWFS**	**Primary Language Used with Students**	**Other Languages Spoken (level)**	**Digital Technology Knowledge**
Anaïs*	UE/JH	40	10	French	English (fluent)	Basic-Intermediate
Carlos*	UE/JH	26	4	Spanish	English (fluent), French (novice), Italian (novice)	High Intermediate
Ella	UE	31	2	English	Indonesian (basic), Spanish (novice)	Intermediate
Sophie	JH	40	9	English	French (fluent), Spanish (fluent), Portuguese (fluent), Hungarian (basic)	Basic-Intermediate

*Both Carlos and Anaïs taught targeted language lessons to the Junior High students once a week.

Students. In total, there were 25 students in the Upper Elementary classroom and five students in the Junior High classroom. Nineteen of the Upper Elementary students/parents and three of the Junior High students/parents opted to participate in the observation portion of the research project. Table 2.6 summarizes the make-up of these classes in terms of student age, and gender.

Table 2.6.

Summary of Student Demographics

Name	**Classroom**	**Age**	**Gender**		**Name**	**Classroom**	**Age**	**Gender**
Channing	UE	11	M		Pierre	UE	11	M
Maria	UE	11	F		James	UE	11	M
Alexa	UE	10	F		Luca	UE	11	M
Daniel	UE	11	M		Meagan	UE	11	F
Dalton	UE	11	M		Ilana	UE	11	F
Sara	UE	11	F		Clark	UE	13	M
Anthony	UE	12	M		Alan	UE	10	M
Andy	UE	11	M		Cole	UE	10	M
Sheila	UE	10	F		Clara	JH	13	F
Silvia	UE	11	F		Isaiah	JH	14	M
Chloe	UE	10	F		Tyrell	JH	13	M

Focal students. Over the course of the study, nine students were identified as focal students. These focal students were identified in several ways: first, some students were chosen based on teachers recommendations that highlighted interesting backgrounds in terms of language or technology; for example, Anthony and Isaiah were pointed out as coming from a bilingual home. In addition, some focal students, such as Daniel and James, were chosen based on their central presence in observations and classroom activities. Lastly, some focal students, such as Silvia and Tyrell, were identified based on the fact that their parents had agreed to participate in interviews. These students will comprise most of the student data used in the subsequent chapters, although not exclusively. Below is a description of these focal students in terms of their age, classroom, language and technology backgrounds, and other important features.

In contrast to many of the students at the school, sisters Ilana (11, Upper Elementary) and Clara (13, Junior High) began attending TWFS later in their scholastic careers—at ages 7 and 9 respectively. At the time, neither spoke French or Spanish. Four years later, though, each was communicatively competent in both languages, as assessed by their teachers. The girls' parents spoke both French and Spanish and helped the girls from time to time with homework; however, their household communicated mainly in English. The girls also shared a computer at home, although neither reported spending much time on it. At school, Ilana reported that she used the classroom computer primarily to write up the first drafts of her reports. While Clara had the right to use a laptop in class as a middle school student, I did not observe her using one.

Daniel (11, Upper Elementary) was an active and central member of the Upper Elementary classroom. While his mother was from Central America, he reported using mostly English at home. His father worked in sales, which included a heavy online component, and Daniel reported that his father used digital technology for personal uses as well, such as Facebook. While Daniel was not permitted to have a Facebook, he was vocal about his preference for digital technology and his use of it, for both schoolwork (unsanctioned by the school) and for entertainment—Clash of Clans and Minecraft.

The daughter of one of the lower level Spanish teachers, Sara (11, Upper Elementary) was an active player in the Upper Elementary classroom. At home, Sara reported speaking mostly Spanish with her mom and mostly English with her dad; in addition, she shared that her extended family in South America, where her mother was from, only spoke Spanish with her. The family had a computer and Internet available at home, but Sara did not have a personal device, such as an iPod or iPad, and did not report using digital technologies much at home. Over the course of the observation period, Sara used the shared class computer to do some research and worked with Silvia on a PowerPoint presentation for their advanced Spanish class.

Silvia (11, Upper Elementary) and Tyrell (13, Junior High) were Melanie's children. At home, their mother spoke some Spanish with the kids, but English was the dominant language. Silvia and Tyrell's father worked in the technology sector. In addition to having a computer available at home, their father engaged the students in technology-based games and programs, and the family had sent the students to a robotics summer camp through TWFS one summer. As a part of the advanced Spanish group, Silvia used the Internet to do some research and PowerPoint to create a presentation. In addition, as a middle school student, Tyrell used a laptop in class.

Eleven-year-old James, the son of parent Christie, was also an active member of the Upper Elementary classroom and the center of many interactions in the classroom. His father, who hailed originally from Central America, spoke only Spanish with James and his younger brother. His mother, Christie, had learned French in high school but did not speak the language at home with her sons; she spoke primary English with her sons. Given James' interest and talent for programming and other digital technologies, James' parents had enrolled him in several digital technology summer camps—specifically, coding and robotics—and had plans to do so again that coming summer. In the Upper Elementary classroom, James was one of the few students allowed to use a personal device—a small Windows laptop fit into brown leather case—to support his learning differences.

Anthony (12, Upper Elementary) and Isaiah (14, Junior High) were the sons of parent Marco. Both of Anthony and Isaiah's parents were raised bilingually. The two boys were also being raised bilingually. Marco also spoke Spanish with his sons, but he cited English as their primary form of communication. Each of the boys had their own personal device at home—Anthony had an iPad and Isaiah had a smaller tablet. Both of them played games on these devices, such as Clash of Clans and Minecraft. At school, Anthony used the school computer for occasional research but not often. Isaiah used a PC laptop to do research and prepare PowerPoint presentations.

Table 2.7.

Summary of Focal Students

Name	Classroom	Age	Gender	Primary Home Language(s)	Digital Technology Knowledge
Daniel	UE	11	M	English/Spanish	Intermediate
Sara	UE	11	F	English/Spanish	Low Basic
Anthony	UE	12	M	English/ Mandarin/Spanish	Intermediate
Silvia	UE	11	F	English	Intermediate
James	UE	11	M	English/Spanish	Advanced
Ilana	UE	11	F	English	Basic
Clara	JH	13	F	English	Basic-Intermediate
Isaiah	JH	14	M	English/ Mandarin/Spanish	Intermediate
Tyrell	JH	13	M	English	Intermediate

Parents. Three parents were interviewed as a part of the project. These parents were identified in two primary ways. First, one parent (Marco) was chosen based on teachers' recommendations that highlighted an interesting background in terms of language and technology. Second, two parents (Melanie and Christie) were chosen based on the central presence of their children in observations done. The parents of Ilana, Clara, Sara, and Daniel—also central figures in observations—were also approached for interviews, but they declined due to busy schedules. Below is a description of the parents interviewed in terms of their occupation, language and technology backgrounds, and other important features.

James's mother, Christie, worked as a program director at a local government organization. Raised in an English monolingual household in a region of the United States with a large Spanish-speaking population, Christie had learned French in college and studied abroad for a year in France during college. Her husband was bilingual (Spanish and English) and spoke only Spanish to her children; she used primarily English with her sons. In terms of technology, Christie used technology as a part of her work—namely email—but did not report a high level of comfort with technology. At home, her husband handled the maintenance of digital technologies. Christie did report using Facebook, at least to follow the school itself and her son's recent trip to Asia with the school.

Anthony and Isaiah's father, Marco, was the primary caregiver to his two sons. Born and raised in South America, Marco grew up in a Spanish-English environment. At the time of the study, he reported speaking primarily English with his sons. In terms of technology, Marco expressed reticence about its use, both in his own life and in his sons' lives. He did not use social media or Skype and texted minimally. In terms of his sons, he did support his sons' use of online games, such as Clash of Clans and Minecraft.

Melanie was both a parent and a staff member at the school. She was the mother of Silvia and Tyrell, and she was the Community Relations Director at the school. She had studied Spanish in high school as well as college. At the time of the study, she reported speaking some Spanish with her children, although the dominant language in their family was English. Melanie cited digital technology—especially computer programs like Excel— as an important part of her

work life. She also described their household as very technology-friendly, supporting different digital technology program exploration at home as well as through summer camps.

Table 2.8.

Parent Summary

Name	Student(s)	Age	Primary Language Used with Students	Other Languages Spoken (level)	Digital Technology Knowledge
Christie	James	Early 40s	English	French (intermediate)	High basic
Marco	Anthony, Isaiah	Mid 40s	English	Spanish (advanced)	Basic
Melanie	Silvia, Tyrell	Mid 40s	English	Spanish (advanced)	Intermediate

Role of the Researcher

In these two research contexts and with these different participants, I was both a researcher as well as a participant. Navigating this balance was not always an easy one, and it merits discussion.

Survey. The survey's distribution was rooted in my own professional networks. I called upon these networks to get in touch with different schools and organizations, a portion of which ultimately distributed the survey to their school communities. In some cases, the personal connection to different schools and organizations seemed to make the difference: knowing me or knowing one of my contacts seemed to prompt individuals to read and consider my request.

In addition to this personal connection, I presented two additional identities to potential survey respondents that may have impacted participation. First, by aligning myself with the University of California, Berkeley, I capitalized on the University's reputation to validate my request. Second, I presented myself as a student in survey solicitation materials; this positioned me as someone seeking to learn from more expert others. This was intended to temper any hesitation related to research and to appeal to individuals' sense of expertise.

Focal school.

Participation in the classroom. I chose to employ participant observations at my focal research site: I acknowledge that my presence impacts the dynamics and interactions taking place in schools and classrooms; as such, I favored participant observation methods for their capacity to render this role transparent in field note write ups and to enable the flexibility to participate in the research setting (Glesne, 2010).

Moreover, while the choice of participant observation was made prior to the start of the study, the nature of the classrooms observed at TWFS ultimately necessitated this style of observation: the school's workshop-style approach, which created much movement in the classroom spaces, made interacting with the students and teachers unavoidable. Moreover, assuming a non-participant observation approach would have likely alienated students and teachers in this hands-on Montessori space.

Alignment with participants. Throughout my time at TWFS, I juggled and shifted between different positionalities, aligning myself with each population in different ways. For example, with teachers at the school, I often evoked my own teacher identity, commiserating

about the challenges—such as long hours—and affirming the joys—such as seeing a student grow. I made it a point to ask how I could help when things became particularly busy. In addition to evoking my teacher role, I also highlighted my student status, underlining how I was learning from them.

I also evoked my student status with administrators as well as parents at the school: I was there to learn from the richness of the school, not to act as an outside critique. During interviews and other interactions with parents and administrators—as well as with teachers—, I maintained a positive yet nonjudgmental orientation, avoiding critical responses.

With students, I usually adopted the role of a curious non-teacher adult; I did not mediate arguments or work to keep students on task. Rather, I let them talk or engage in the activities that they wanted to. At times, I also asked them questions, both related to their schoolwork and to the principle themes of the project.

Admittedly, juggling these different positionalities was not easy, and at times, it was not very comfortable. One day, for example, I found myself empathizing with a parent participant about the digital technological limitations at the school in the morning, and then, later that afternoon, shaking my head with the Upper Elementary English teacher about parental pressures to include more technology.

In addition to producing some internal dissonance for me, switching positionalities was also not always successful. For example, on one day, I was sitting in the back room of the Upper Elementary classroom with the students while they prepared for their parent-teacher conferences. At several moments during my time there, both Ella and Anaïs, the English and French teachers, came back to redirect student activity toward more relevant activities. However, I remained silent as the students' conversation bubbled up again after the teachers had left; I even prompted more conversation with my own questions. At the end, Ella came back in and lingered. I shifted from my student-centered alignment, asking two students how their conference preparations were going before leaving the space entirely. My two positionalities—as teacher ally and as student ally—had clashed in this space, leaving me torn and my alignment with both teachers and students threatened.

Several factors influenced these multiple alignments and positionalities in the school. First, I remain committed to school-based research that respects and builds-up schools. Rather than swooping in for selected data points and then retreating to the Ivory Tower, I want my research to be collaborative and engaged, identifying what is working as well as what might be improved in constructive and thoughtful ways. Avoiding open critique and affirming school community members' behavior, even when that resulted in contradiction, was a primary way of doing this.

Second, securing the collaboration of a school for case studies and ethnographic research is not always easy; in addition to requiring additional time from people who are already overworked and underpaid, research can arouse suspicion or mistrust on the part of schools. In other words, in order to successfully complete the case study, I felt that it was important to maintain a positive relationship with schools.

Data Collection

The two components at the heart of this project design, I engaged in different kinds of data collection so as to provide ample and varied sources from which the research questions could be addressed (Miles & Huberman, 1994).

Survey. The survey, ultimately distributed to a broad cross-section of global schools around the United States, was designed to provide a broad-strokes portrait of how a larger spread

of global schools and global school actors positioned second/foreign language and digital technology within global education and to contextualize findings from the focal school. It comprised a series of questions that were geared toward different school groups (teachers, administrators, parents, and students) and that targeted perceptions and uses of language learning and technology[6] in education today.[7]

Survey development. The survey instrument was developed through an iterative process. The survey's core design consisted of open-ended and closed-ended questions that were tightly linked to the research questions (Codo, 2008; Dörnyei, 2003; Norris, Davis, Sinicrope, & Watanabe, 2009; Wilson, 2005). In line with the theoretical framework of this project, the primarily qualitative nature of the survey allowed respondents' understandings to emerge in the data and did not require respondents to map their understandings onto preexisting and prescriptive choices, as would be the case with more quantitative survey formats.

After the initial survey drafting, the survey went through two rounds of pilot testing in Spring 2015. A total of five schools were surveyed in this pilot phase. While the schools were selected via a sample of convenience, they collectively matched many of the different components to be targeted in the official study, such as: meeting the definition of a global school as it is outlined for this project; constituting diverse populations; and representing public and private schools; immersion and foreign language models; as well as BYOD and As Needed technology school models. This made them appropriate pilot sites.

The first pilot surveyed parents, teachers, and administrators at two different schools. Below is a brief description of the schools and the number of responses from the two rounds of pilot testing:

Table 2.9.

First Round Survey Pilot Summary

							Responses		
	Location	**Grade**	**Global School Type**	**Public v. Private**	**Lang Model**	**Tech Model**	**Parent**	**Teacher**	**Admin**
School A	Western US	K-8	New	Private	Immersion	As Needed	2	2	0
School B	Western US	9-12	New	Private	Foreign	As Needed	69	9	7

[6] The survey instrument also included an open-ended question on participants' perceptions of "global education." These data were not included in this analysis but will be used in subsequent analyses.

[7] The survey instrument asked participants to record their understanding of second/foreign language and digital technology "in education today" rather than specifically in "global education." This was due to the wide-ranging and often ambiguous understandings of what "global education" means found in the pilot study; the lack of clarity around "global education" made subsequent analyses of participant responses more difficult, so it was removed and replaced with "in education today." Given the operationalized definition of global education used in the study and given that all schools in the study met that definition, I make the interpretive connection between "global education" and "education" in study analyses. For a discussion of the limitations of this design choice as well as next steps, see Chapter 7.

The results of the first pilot study permitted a fine-tuning of the survey instrument for adult populations; the revisions made were largely around the organization and clarity of survey items, developing a more logical flow of the instrument and shifting survey item wording to more specifically target desired topic areas.

The second pilot survey focused on students. A summary of the schools and responses gathered from them can be found in Table 2.10. One of the second round pilot schools, School A, agreed to be a part of the official data collection done later that calendar year; this school was Global Studies Prep.

Table 2.10.

Second Round Survey Pilot Summary

	Location	**Grade**	**Global School Type**	**Public v. Private**	**Lang Model**	**Tech Model**	**Student Responses**
School A[1]	Western US	9-12	New	Private	Foreign	BYOD	182
School B	Western US	7	New	Public	Foreign	As Needed	169
School C	Midwestern US	9-12	New	Public	Foreign	As Needed	30

[1]Global Studies Prep, a school that also participated in the final survey distribution.

Similarly to the first pilot, this second, student-focused pilot allowed for adjustments of item wording to more accurately target the project's central constructs; in addition, it highlighted areas where questionnaire item formulation did not cater to a student audience.

Survey distribution. Once edited based on pilot survey information, the final survey contained approximately 30 items, divided into two primary sections: perceptions and uses. The first section on perceptions remained virtually identical across population groups. More variation was incorporated into the use section, as it was important to differentiate between the different contexts in which both language and technology were used by the different population groups. The final survey was set-up in and distributed via Qualtrics, which guided the different groups to the appropriate, role-specific questions. A copy of the survey can be found in Appendix A.

The survey was officially distributed in Fall 2015 and Spring 2016. I divided the distribution into two efforts. In the first effort, a professional contact at an organization that accredits many global schools sent out introductory emails to all of the schools with their accreditation in the United States—about two dozen schools. I then followed up with each school individually. Four of the five schools were recruited in this manner.

In a second effort, I drew up a list of schools around the country who met the criteria for a global school as defined in this project via Internet searches and personal networks; I included the three types of schools—established global, new global, and traditional international schools—on the list. I then contacted them individually. One school was recruited in this manner.

In total, I contacted over 50 schools around the United States to participate in the survey. Five schools agreed to participate, in addition to the focal school. The response totals for each school are listed in Table 2.11. Two of the schools requested modifications to the targeted

populations: not including parents (Trinity Preparatory) or students (International Studies Charter). International Studies Charter also requested to only send the first portion of the survey (perceptions of language and technology) due to time restraints.

Table 2.11.

Total Survey Response Summary

Survey Participants per School					
	Teachers	**Parents**	**Admin/ Staff**	**Students**	**Total Participants/ School**
Focal School	0	2	0	4	6
Aurelius International	9	11	6	47	73
Trinity Preparatory	5	0	2	9	16
Midwest International	7	65	1	33	109
Global Studies Prep	8	24	0	278	310
International Studies Charter	14	0	4	0	18
TOTAL	**43**	**102**	**13**	**371**	**532**

In addition to these survey data, I collected webpages and online documents from each school that agreed to participate in the survey in order to round out the portrait of these schools. These consisted of mission and vision statements; school summaries (including size, grades, and demographic information); school history; curriculum descriptions; and any pages that referenced global education, language learning, or technology policies.

Focal school. The centerpiece of the project design, the focal case study of The World First School (TWFS), orchestrated several kinds of data collection techniques to provide an in-depth portrait of the school and to build off of the trends established in the survey data.

Interviews.

Overview. A primary source of data was semi-structured interviews (Patton, 1990); these included descriptive as well as structural questions (Spradley, 1979) focused primarily on a) perceptions of second/foreign language and digital technology; and b) uses of second/foreign language and technology in education today.[8] These questions remained largely the same for the

[8] An additional question on understandings of global education was also included. As was the case with the survey, this was not included in the current analysis. Similarly, interview instruments asked participants to discuss their understanding of second/foreign language and digital technology "in education today" rather than specifically in "global education." See Footnote 7 for additional information on this as well as Chapter 7 for a discussion of the limitations of this design choice.

different populations interviewed (teachers, administrators, students, and parents); this permitted a way to compare and contrast how individuals and groups oriented to the primary constructs of second/foreign language and technology. These questions also aligned closely with the questions of the survey; this enabled comparison of the focal school and focal participants with survey schools and participants. A basic template of the interview questions, which was tailored to apply to each subgroup, can be found in Appendix B.

Populations. I conducted these semi-structured interviews with teachers, administrators, parents, and students. In addition, I conducted one group interview with teachers. Interview data is summarized in Table 2.12.

Administrators (n=2). Both the Head of School, Lisa, and the Assistant Head of School, Rosa, were interviewed twice as a part of the project. The first interviews took place at the beginning of my observations (March/April, 2015), and the second round took place at the end (late May/June, 2015). The first round of interviews focused on perceptions of second/foreign language and technology while the second focused on uses of these components and on questions gleaned from observations (see next section for more information on participant observations). In addition to these perceptions and uses, interviews with administrators focused on different areas in order to learn more about the school from a more macro level: with Lisa, we explored the motivations behind establishing the school as well as challenges to maintaining its vision (first interview) as well as her vision for the future of the school (second interview); with Rosa, we focused on programmatic logistics and school demographics (both first and second interviews).

Teachers (n=4). I interviewed four teachers: Upper Elementary teachers Carlos, Ella, and Anaïs as well as Junior High teacher Sophie. The first round of interviews focused on teacher perceptions of second/foreign language and technology. Second round teacher interviews included questions on language use in the classroom that were generated from participant observations (see next section for more information on participant observations); these questions probed different observed trends in language and technology use in the classroom and tied into data triangulation, to be discussed presently.

Carlos, Ella, and Sophie were each interviewed individually two times; the first interview took place before or at the beginning of official observations—between mid February and early March 2015—and focused on perceptions of second/foreign language and digital technology. The second interview took place at the end of the school year—in late May or early June 2015—and focused on uses of the two components. In the case of Anaïs, one individual interview was conducted in late May 2015; all major interview questions covered in this interview.

In addition to individual interviews, I conducted a group interview with all four of the Upper Elementary and Junior High teachers in March 2015; this interview focused on narratives of school and student events that embodied the vision of the school with regards to second/foreign language and digital technology as well as challenges to that vision.

Students (n=8). Individual interviews were conducted with two students in the Upper Elementary classroom—Ilana and Sara. They took place in May 2015. In addition to these individual interviews, I conducted more informal mini-interviews with a number of students in both the Upper Elementary and Junior High classrooms over the course of the semester; these included several of the children of the parents interviewed: Silvia and Tyrell (Melanie); Anthony and Isaiah (Marco), and James (Christie). These mini-interviews were possible due to the nature of the classroom itself in which students often had open work or free periods where it was possible for me to strike up conversation with one or several of them at a time. Mini-interviews

were chosen over full interviews for two main reasons: first, they were more convenient for the students, teachers, parents, and research, as they didn't require extra coordination and time; second, some students, while comfortable talking in a larger group, did not feel comfortable talking to the researcher one-on-one and preferred the informal, group setting.

Parents (n=3). Interviews were also conducted with three parents who had children in one or both the classrooms in the study. Interviews were done in May 2015 and inquired into perceptions and uses of language and technology, both in terms of themselves and in terms of their children.

Logistics. Most of the interviews took place at or near the school itself; all student interviews, individual or mini, took place in the Upper Elementary or Junior High classroom spaces during regularly scheduled class time. Similarly, interviews with teachers Ella and Sophie were held in open classroom spaces either during or after class. Interviews with administrators took place either in their respective private offices. One of the parent interviews, with Melanie, was arranged in the school library on a day when it was closed.

Some interviews took place off the school grounds: both interviews with Carlos, the interview with Anaïs, and two parent interviews—Christie and Marco— were held at cafés near the school. Teacher and administrator interviews averaged 45 minutes in length; parent and student interviews averaged 30 minutes. All interviews were audio recorded and later transcribed. Lastly, all interviews were conducted in English, expect the interview with Anaïs, which was conducted in French.

Table 2.12.

Summary of Interview Data

Participant role	**Type of Interview**	**Name (s)**	**Number**	**Date** (month/ year)	**Length** (minutes)	**Location**
Teacher (UE)	Individual	Carlos	2	03/15 05/15	45 54	Cafe
Teacher (UE)	Individual	Ella	2	03/15 06/15	35 60	School Cafe
Teacher (UE)	Individual	Anaïs	1	05/15	45	Cafe
Teacher (JH)	Individual	Sophie	2	02/15 06/15	45 41	School
Teachers	Group	Carlos, Ella, Anaïs, Sophie	1	03/15	45	School
Administrator	Individual	Lisa	2	03/15 06/15	45 51	School
Administrator	Individual	Rosa	2	03/15 05/15	45 25	School
Student (UE)	Individual	Ilana	1	05/15	27	School
Student (UE)	Individual	Sara	1	05/15	28	School
Student (UE)	Mini	Silvia	1	05/15	5	School
Student (UE)	Mini	James	1	05/15	5	School
Student (UE)	Mini	Anthony	1	05/15	5	School
Student (UE)	Mini	Daniel	1	05/15	10	School
Student (JH)	Mini	Isaiah	1	05/15	10	School

Student (JH)	Mini	Tyrell	1	05/15	10	School
Parent	Individual	Marco	1	05/15	45	Cafe
Parent	Individual	Melanie	1	05/15	25	School
Parent	Individual	Christie	1	05/15	40	Cafe

Participant observations. To further flesh out articulated understandings of second/foreign language and digital technology, I used participant observations to target embodied understandings of these two components at the focal school.

Procedures. Participant observations were semi-structured in nature: I paid attention to pre-established areas of interest, but I also allowed interesting and relevant categories of analysis to emerge directly from the data (Glesne, 2010; Miles & Huberman, 1994). Pre-established areas of interest stemmed both from standard qualitative research methods and from the research questions. These areas included the following:

- General description of the classroom setting (e.g., classroom layout, individuals)
- Topics (e.g., subject area, writing, cooking)
- Activities (e.g., lecture/lesson, individual work, pair/group work)
- Materials used (e.g., books/textbook, handouts, digital technology)
- Interactions (e.g., student-teacher, student-student, student-material)

These observation areas dovetailed with attention paid specifically to language and digital technology use in the classroom, following the research questions. Use was conceptualized to be comprised of three components (see Figure 2.5):

Figure 2.5. Conceptualization of Language and Technology Use

- Amount: How much are languages and technology used?
- Context: Where are languages and technology used?
- Purpose: For what are languages and technology used?

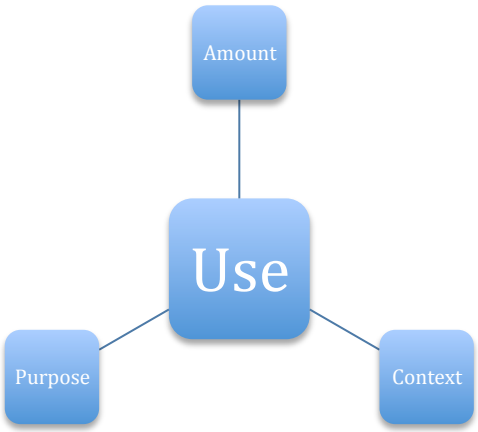


Figure 2.5. The operationalized conceptualization of use used in this study comprised three components: amount, context, and purpose. *Amount* assessed how much languages or technologies were used. *Purpose* looked at what these two components were used for. And *context* assessed where language and technology were used.

Before each observation session, I reviewed these target areas of interest so that they would be fresh during the observation itself. In addition, I reproduced these categories and the understanding of use on a post-it note and placed it at the top of the notebook in which I took notes during observations; this allowed me to have a visual reminder of the categories of interest during observations themselves.

During these observations, I selected different events to observe. Following van Lier (1988), I acknowledge that all observation is necessarily selective in that researchers—and their documentation equipment—cannot attend to everything that goes on in a classroom. This was particularly apparent in the TWFS classrooms where multiple lessons and activities took place simultaneously. As such, I selected events through a multi-step process; first, I identified with the teachers the general activities that I wanted to observe; this included academic lessons, open work time, major school events, and, for the Upper Elementary, weekly cooking. Second, on a weekly basis, the teachers and I would find times that worked for our schedules and that included one or more of these target activities. Third, once at the school, I again followed van Lier (1988) and oriented to interesting stimuli or interactions; often, this selection was based on identifying an event related to the primary components at the heart of this study—language and technology. However, I remained flexible and observed other events as well. In sum, this observation strategy allowed me to flexibly attend to the use of language and technology in the classroom and to simultaneously develop a holistic picture of each classroom (Van Lier, 1988).

Observations yielded several types of data. First, I recorded jottings in a notebook during my observations; these jottings were then turned into field notes, complete with analytical memos, off-site but on the same day (Emerson, Fretz, & Shaw, 1995; Glesne, 2010; Miles & Huberman, 1994). Second, I audio-recorded all but one of the observation sessions both with a dedicated audio-recorder as well as with an app on my smartphone; I often placed the two devices at opposite sides of a focal interaction, allowing me to ensure better coverage of the often-noisy, dynamic spaces. Lastly, when appropriate, I set up a video camera on a small, flexible tripod at different spots in the classroom space. The use of video recording depended on 1) the participants involved, as not all teachers or students were not comfortable with video recording; 2) the location of the activity or event, as not all classroom spaces easily accommodated the tripod; and 3) the activity or event itself, as some activities or events had too much movement (e.g., between classroom spaces, inside the classroom to outside the classroom, etc) to reasonably capture video. When used, the use of video recording was very helpful given the fact that students were engaged in a range of activities in different spaces throughout observation periods, allowing me "be" in two places at once and, thus, to capture multiple events at once.

TWFS. I visited TWFS approximately 20 times between March 2015 to mid-June 2015. In total, I observed approximately 35 hours of activity. These observations produced approximately 80 pages of field notes, 25 hours of audio recording, and 4 hours of video.

Table 2.13.

Summary of Observation Data

Length of Time Observed	3.5 months
Total Time Observed	35 hours
Audio Recording	25 hours
Video Recording	4 hours
Total Field Notes	80 pages

Upper Elementary**.** Approximately 25 hours of observation were done in the Upper Elementary classroom. There, I focused on science, math, cooking, and open work periods. These were chosen for several reasons. First, science, math, and cooking were each taught by each of the three Upper Elementary teachers; this allowed me to compare language and technology use across teachers, in line with the research questions. In addition, these lessons were scheduled at relatively consistent times week-to-week and worked with both the teachers' and my schedule. Below is a summary of the different lessons observed in the Upper Elementary classroom; as the three teachers in the classroom spoke only one language with the students, the table is organized by teacher/language:

Table 2.14.

Upper Elementary Observations by Teacher/Language

Teacher (Language)	**Activity**	**Number of Lessons**
Anaïs (French)	Science	1
	Math	3
	Cooking	1
Carlos (Spanish)	Science	2
	Math	2
	Cooking	1
Ella (English)	Science	1
	Math	3
	Cooking	1
Varied (Varied)	Work Time	8

Junior High. Approximately 10 hours of observations were done in the Junior High class. Here, I focused on the designated French and Spanish classes and students' preparations for their research presentations. In the Junior High class, language was not fully integrated into the curriculum as it was in the Upper Elementary level class, meaning that language was incorporated through dedicated French and Spanish lessons given once a week for 2 hours. These times, however, conflicted with my personal teaching schedule, limiting the observations done.

Table 2.15.

Junior High Observations by Teacher/Language

Teacher (Language)	**Activity**	**Number of Lessons**
Anaïs (French)	French lesson	1
Carlos (Spanish)	Spanish lesson	3
Sophie (French & English)	Presentation Prep	3

Extracurricular events**.** In addition to classroom observations, I attended several school events outside the school day, including: the Parents' Tea, in which the Upper Elementary students presented their cultural reports on an Asian country; and a vocal concert, in which both the Upper Elementary and Junior High students performed and at the end of which a graduation ceremony for several focal students took place. I attended these events both to gain a more holistic picture of the school as well as to build and sustain relationships with participants. These events were not audio or video recorded, but I did produce field notes following each.

Document collection. Observations also yielded a range of different documents and artifacts collected from the school site. Artifacts included photos of the classroom environment, activities, student work, and school information as well as some hardcopies of student work and school information. These artifacts were supplemented by documents from the school website, including mission/vision statements, pedagogical approach, curriculum, and admissions and financial aid.

Data Analysis

Data collected from both the survey and the focal school were subsequently analyzed in complimentary ways toward answering the research questions.

Constructing the database. Before analysis, the data were organized and compiled into the database. The survey component of the database was constructed following the distribution of the survey in Fall 2015/Spring 2016. Survey data were downloaded from Qualtrics at two intervals: in January 2016 and in March 2016. Survey data were compiled into Excel files, cleaned, and divided into open-ended questions and categorical questions (e.g., Likert scales, multiple choice questions). Open-ended questions were imported into Atlas.ti for qualitative analysis; in addition, school documents from the Internet were imported into Atlas.ti. Categorical questions were imported into Stata for analysis.

For the focal school data, database construction began with the first visit to the school. Field notes were produced on an on-going basis and school artifacts were collected in the same manner. In addition, I kept on-going notes on my preliminary questions and analyses throughout data collection (Bogdan & Biklen, 2006). These guided subsequent interviews and observations as well as informed the eventual analysis phase. When applicable, the first round of interviews were transcribed before the second, in order for the first interview to better inform the second. At the end of data collection, I transcribed the remaining interviews as well as the audio/video from participant observations. All transcriptions were done into the original language used by the participant. Transcriptions were first done at a general, macro level in order to gain the gestalt of the interviews and interactions. Important moments were then flagged, and I returned for a more detailed transcription of these moments. In addition to what was said, I also transcribed what

happened when transcribing classroom interactions (Ochs, 2006): non-verbal interactions caught on video or documented in field notes. All transcriptions as well as school documents and artifacts were imported into Atlas.ti.

Alignment between research questions and data. The table below summarizes how the data collected were used to answer the research questions:

Table 2.16

Research Questions and Data Collection Summary

Research Question	**Data Used in Analysis**	
	Survey	**Focal School**
1. How do school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through discourse?	• Survey responses (students, parents, administrators, parents) • School documents (online)	• Interview transcriptions (students, parents, administrators, parents) • Field notes • Audio and video transcriptions • School documents (online) • School artifacts • Student artifacts
2. How do these positionings align or conflict across groups?	• Survey responses (students, parents, administrators, parents) • School documents (online)	• Interview transcriptions (students, parents, administrators, parents) • Field notes • Audio and video transcriptions • School documents (online) • School artifacts • Student artifacts
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?	• Survey responses (students, parents, administrators, parents) • School documents (online)	• Interview transcriptions (students, parents, administrators, parents) • Field notes • Audio and video transcriptions • School documents (online) • School artifacts • Student artifacts

Analyzing the data.

Critical discourse analysis. Interested in complex relationships, I adopted critical discourse analysis as my primary data analysis method. Critical discourse analysis (CDA) moves beyond the belief that language is a mechanical system of grammatically-based units, and, rather, situates language as a social practice that is structured by and structuring society (Blommaert, 2005; Fairclough, 2001). Within this analytical framework, language and other forms of

symbolically meaningful social practices become "crucial to an understanding of wider aspects of power relations" in society (Blommaert, 2005, p.2).

In line with my theoretical framework, I drew particular inspiration from Blommaert's approach to CDA. In juxtaposition to other approaches, Blommaert advocates a more open and flexible understanding of power situated within a larger series of spatial and temporal timescales. More specifically, he suggests that analyses should not *assume* domination, but instead look for ways in which power is exercised by all. Moreover, he encourages analyses that take into account historical as well as non-local contexts. This approach, then, more appropriately suits the current project and its ecological model.

An analysis from this perspective looks link micro-level analyses of text to large social and historical structures and phenomenon (Blommaert, 2005; Fairclough, 2001). In relation to the current project, then, I examined data with an eye to identifying participant discourses of second/foreign language and digital technology, both articulated and embodied, as well as to linking these participant-generated discourses to larger discourses of language, technology, global education, and globalization circulating today.

CDA was used in both the survey and the case study. For the survey, CDA was used on survey school documents and open-ended participant responses; for the case study, CDA was used to analyze interview transcripts, video and audio transcriptions from participant observations, field notes, and school documents as well as artifacts.

For all these data sources, text analysis began with iterative rounds of coding (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009). Codes were generated using both inductive and deductive processes (Miles & Huberman, 1994). First and in line with the ecological approach taken here, I worked to allow trends in the data to emerge for themselves, without attempting to force them into the boxes outlined in the literature and previous literature, through inductive coding procedures. Specifically, I began each data set with a general analysis, writing analytic memos of the trends I immediately noticed. Next, I went through the data sets with an eye to identifying the different ontological and functional discourses of second/foreign language and digital technology that participants articulated or embodied; these were the two major categories of discourses found in the literature review. To do so, I read through the data multiple times, identifying emerging trends and creating preliminary discourse categories with sample quotations. These preliminary categories were reviewed by two colleagues who helped to refine and redraw the categories. For example, during this review stage, an initial category for second/foreign language, *understanding/awareness*, was further subdivided into two separate discourses: *cultural understanding and awareness* and *cognitive development*. The revised discourse categories were then re-applied to the data (see Appendix C for a sample of the major inductive codes developed in this way).

The different discourses that emerged in the data were often overlapping and not often clearly delineated, making the coding process a complicated and at times challenging one. Take, for example, the following example from the survey in response to the question: "why is digital technology important for students in the US to learn today?

> Students in the United States are very privileged compared tot the rest of the world. Parents are buying their six year old children ipads and iphones. Children of these age [sic] enjoy games. Once they have reached adolescence they will look to text based or social media made applications. Students in the U.S. would rather communicate and look to see what's popular then do research and learn.

In this response, there was not a clear indication of how the participant saw the role of digital technology nor what it was. For these kinds of responses and data, I often flagged the example and sought council from colleagues on how to interpret the excerpt. Upon analysis and consultation with colleagues, this particular piece of data—and particularly the last sentence—could be interpreted as lamenting the impact of technology on student learning, which fell into the *balanced and responsible use* discourse found in the survey. When no consensus could be reached, I left the data as is and did not apply a code.

Once this macro-level analysis was complete, I returned to the data and overlaid the different deductive codes that stemmed from the literature review (see Appendix C). This allowed me to see where the project's data intersected with past findings as well as to identify interesting trends in the discursive positioning of second/foreign language and digital technology that extended beyond past findings and their representative deductive codes. For example, while the *cultural understanding and awareness* code aligned well with the ideological orientations to language and technology reviewed in Chapter 1, the data also revealed an *omnipresence* discourse surrounding digital technology that had not been present in past discussions of digital technology in global education.

Through the different rounds of coding, I also kept a running list of the different trends I observed across individuals, groups, and schools; I then returned to each trend and developed a query method using Atlas.ti's tools to confirm whether or not this trend could be confirmed in the data. While each query was different, the general procedure was to identify the codes and populations that applied to the trend and to run specific queries to test the validity of the claim (Miles & Huberman, 1994). For each data source (i.e., survey responses, interviews, observations, and school documents), I wrote up summaries of my analyses in analytic memos for each of the principal topics of the project (global education, language, and digital technology), divided by school as well as by population. I revised these memos as observed trends were confirmed or altered based on the different queries done (Miles & Huberman, 1994). In these memos, I tied the trends emerging from the multiple rounds of coding to larger discourses of global education and globalization, as per the final stages of CDA.

With this macro understanding of the different discourses found in the data as well as the trends I observed across individuals, schools, and groups, I turned to a micro-level analysis of participant discourses. While this micro-level analysis had been a part of the previous steps, this phase explicitly emphasized this kind of analysis. Specifically, I paid particular attention to vocabulary and word choice, spatial and temporal markers, grammar and grammatical positioning, structures of responses (such as pauses or repetition in interviews or length of response in survey), and non-verbal cues (Blommaert, 2005; Fairclough, 2001). I then considered the implications of these micro-level features for the over all meaning of the different discourses as well as for how second/foreign language and digital technology were positioned within global education. An example from this phase of analysis comes from Assistant Head of School, Rosa. The following excerpt fit squarely within the *globalization* language discourse, which positioned the rationale for language learning today in terms of the increased flows characteristic of this phase in history:

> Well I think [language is] their **future**. You know the world has **shrunk**. We're going to have to work all as one. To **survive**. You know we are so many billion people in this world and natural resources are **exhausting**. So we need to work together to be able—and

> so they need to be able to communicate and not only language itself but they need to be able to feel the interest in learning about the culture and the needs of the family in (1.0) the middle of Algeria. You know what their needs are. (Interview, April 3, 2015)

Upon closer inspection via a micro-level analysis, Rosa's word choices—"shrunk," "survive," "exhausting"— reveal how anxiety might undercut this globalization discourse. The ultimate analysis of this quote, found in Chapter 4, links this anxiety not only to a shifted understanding of the globalization discourse but also to how it relates to historical identities and imagined non-local contexts (Blommaert, 2005). This level of analysis, then, revealed increased nuance and complexity of the discourses as well as supported their linking to larger understandings of global education and our global society more broadly.

Survey specifics. While the majority of survey responses, solicited from open-ended questions, were analyzed using CDA, as described above, categorical responses were analyzed using different methods. For these survey questions—those that asked respondents to specify a selection from a fixed list, such as Likert scales and multiple choice questions—I produced descriptive statistics through Stata. In addition, while I opted to use an open-ended question to investigate which second/foreign languages that participants thought were important to learn today (see Appendix A), I also tallied the first three languages that each respondent selected and analyzed them using descriptive statistics through Stata.

Survey analysis focused on the *perception* of second/foreign language and technology, not their *use*: while the use questions were included in the survey distributed to participating schools, it became clear in constructing the data base that very few respondents had answered these questions in a satisfactory manner: answers were either not provided or were too brief to adequately analyze. This was likely due to survey fatigue as well as the cognitive load inherent in self-reporting such information. As such, I opted to focus analysis on perception questions.

Furthermore, analysis did not focus on differences across school types or language and technology models; this was primarily because the schools that participated were selected via a sample of convenience and did not constitute a repetitive sample from which to draw conclusions. Finally, due to low response rates for the focal school and administrators/staff at all schools (focal school: n=6; administrators and staff: n=13), these data were eliminated from school-based or group-based analyses, although included in analyses of the whole sample.

Strategies for testing/confirming findings. A series of strategies were used to confirm findings. First, collecting a range of different data across the research settings—interviews, participant observations, documents, and survey responses—ensured data triangulation and the ability to compare and confirm trends and findings across the different sources (Bodgen & Bilken, 2006; Miles & Huberman, 1994). In addition, I used the extended time spent at the focal school to confirm findings in two primary ways: first, I used the second round of interviews to ask participants about the trends that I was seeing, helping to confirm or refute the nascent analysis that I was conducting (Bodgen & Bilken, 2006; Miles & Huberman, 1994).

Second, I identified trends in the classroom observations as I went and used subsequent observations to find additional contexts in which I could confirm/refute these trends. After identifying patterns in the data in the analysis phase of the project, I tested these findings in by examining alternative possibilities and by considering the weight of the evidence supporting the trends (Miles & Huberman, 1994).

Finally, as described above, the different discourses identified in the data were reviewed in consultation with two sets of colleagues. While the final application of the codes to the data

did not undergo inter-rater reliability processes (a limitation of the study), this processes of code creation helped to validate the codes and discourses that were the central findings of this study.

Conclusion to Part I and Introduction to Parts II & III

This chapter and the previous one laid the foundation for this dissertation study: given the centrality of second/foreign language and digital technology within ambiguously-defined global education efforts, I designed a two-pronged embedded case study in order to understand how different school actors position these two components through articulated and embodied discourse, how these positionings align or conflict across groups, and how this produces understandings of global education. In the next two parts, I explore these different positionings for both second/foreign language (Part II) and digital technology (Part III), providing an overarching portrait of the major discourses used to position these two components at survey schools (Chapters 3 and 5) as well as a more detailed portrait of how The World First School positioned these components and the tensions they navigated (Chapters 4 and 6).

CHAPTER 3: SURVEY FINDINGS—SECOND/FOREIGN LANGUAGE IN US GLOBAL SCHOOLS

Introduction

The survey reported on in this chapter was distributed to a broad range of global schools around the United States. Its primary purpose in the research design was 1) to identify how a larger spread of global schools and global school actors positioned these two components within global education through an analysis of the prevalent discourses of second/foreign language and of digital technology reproduced and, as a result, 2) to contextualize the positioning and discourses of second/foreign language and of digital technology identified at the focal school.

A total of six schools participated in the survey: the focal school (The World First School) and five additional schools. The analysis presented here focuses on perceptions of second/foreign language for teachers, parents, and students; due to a small number of responses that were often incomplete, I did not analyze administrator/staff or the focal school discourses in terms of differences across groups or schools, although these responses are included in the overall analysis. In addition, some schools did not distribute the survey to all the targeted participants (e.g., Trinity Preparatory did not distribute the survey to parents) and, consequently, these populations are not included in the subsequent analyses. Finally, data from closed-ended questions were analyzed using descriptive statistics while data from open-ended questions were analyzed using a combination of iterative rounds of inductive and deductive coding (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009) and critical discourse analysis (Blommaert, 2005; Fairclough, 2001). (For more information on the survey itself, its development, and the participating schools, see Chapter 2.)

This chapter is organized around two sets of questions: 1) How important is second/foreign language and why? And 2) Which second/foreign languages are important and why? For each, I first discuss the general trends in respondents' answers through descriptive statistics. I then highlight the prominent discourses of second/foreign language reproduced by participants that contextualize these trends and that shed light on how second/foreign languages were positioned within global education. I also highlight variation across school groups as well as schools and link the discourses that arose in the survey data to the discourses discussed in Chapter 1. I conclude with a summary of the issues raised in the survey and that will be investigated in Chapter 4.

How Important is Second/Foreign Language and Why?

The first survey question on this component of global education, represented in Figure 3.1, asked respondents to assess the importance of learning second/foreign languages in education today[9] on a Likert scale of Not Important (1) to Very Important (5).

[9] As discussed in Chapter 2, study instruments, including survey questions, did not ask participants to articulate their understanding of second/foreign language and digital technology "in global education" but rather "in education today." This was due to the wide-ranging and often ambiguous understandings of what "global education" means found in pilot studies. Given the operationalized definition of global education used in the study and given that all schools in the study met that definition, I make the interpretive connection between "global education" and "education" in analyses. For more details on this within the study design, see Chapter 2. For a discussion of the limitations of this design as well as next steps, see Chapter 7.

Figure 3.1. Survey Question: Assessing the Importance of Language in Education Today

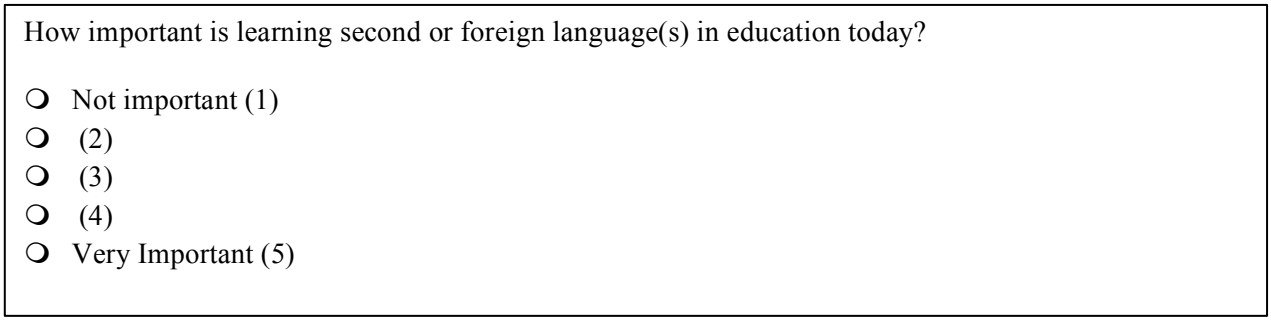


Figure 3.1. The first question that survey participants encountered on second/foreign language through the online platform Qualtrics.

Across global school actors who participated in the survey, second/foreign language was perceived as important in education today: 82% (n=434) of respondents selected second/foreign language as Important or Very Important (4 or 5, respectively) while only 5% (n=28) selected second/foreign language as Not Important or Not Very Important (1 or 2, respectively) (see Table 3.1 and Figure 3.2).

Table 3.1

Perceived Importance of Second/Foreign Language by School Group

School Group	1 Not Important	2 Not Very Important	3 Neutral	4 Important	5 Very Important
Teachers (n=43)	0%	0%	12%	7%	81%
Parents (n=102)	1%	3%	6%	8%	82%
Administrators (n=9)	0%	0%	0%	11%	89%
Staff (n=4)	0%	0%	0%	50%	50%
Students (n=369)	2%	4.07	15%	33%	46%
Total (N=527)	**2%**	**3%**	**12%**	**25%**	**57%**

Figure 3.2. Perceived Importance of Second/Foreign Language, All Respondents

Survey question: "How important is learning second or foreign language(s) in education today?"

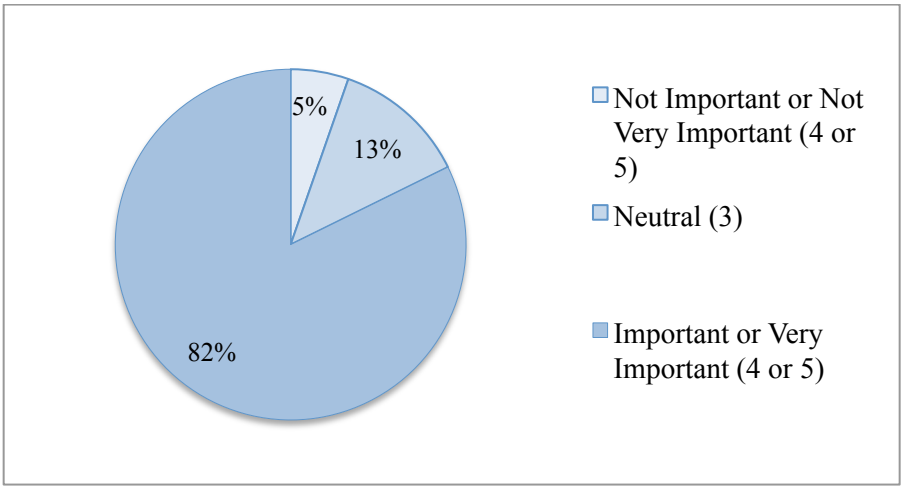


Figure 3.2. Pie chart representing all survey respondents' perceived importance of second/foreign in education today. N=527. The full breakdown (percentages and participants) is as follows: Not Important/1 (2%, n= 10); Not Very Important/2 (3%, n=18); Neutral/3 (12%, n=65); Important/4 (25%, n=134); Very Important/5 (57%, n=300). Data have been rounded to whole numbers to improve readability.

Within this overall portrait of second/foreign language's perceived importance in education, there were some distinct differences across school groups (parents, teachers, and students). Students, for example, were much more mixed in the importance they ascribed to second/foreign language: only 46% of students (n= 171) selected second/foreign language as Very Important (5) versus 82% of parents (n= 84) and 81% of teachers (n=35) (see Figure 3.3).

Figure 3.3. Perceived Importance of Second/Foreign Language: Teachers, Parents & Students

Survey question: "How important is learning second or foreign language(s) in education today?"

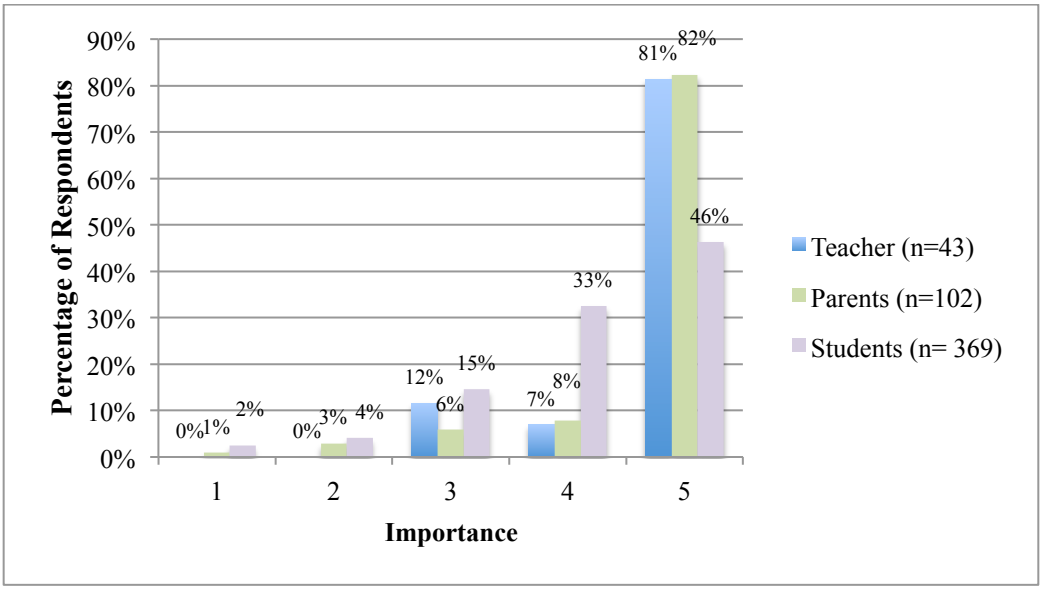


Figure 3.3 Bar graph representing teacher, parent, and students' perceived importance of second/foreign language in education today. N=527. Due to small sample size, administrators and staff were not included. Data have been rounded to whole numbers to improve readability. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

On the one hand, this might suggest that, while adults across schools were clear on the high importance they placed on second/foreign language in education today, students as a group may have been less sure, ascribing differing levels of importance to second/foreign language.

On the other, however, this trend with students can be broken down and better explained by looking at the differences across schools. As illustrated in Figure 3.4, students at Global Studies Prep were much more divided in their perceived importance of second/foreign language's importance: 39% selected second/foreign language as Very Important (5), 36% as Important (4), and 17% as Neutral (3). This stands in contrast to Aurelius International, Trinity Preparatory, and Midwest International students who much more consistently positioned second/foreign language as Very Important (74%, 75%, 67%, respectively). When looked at without their Global Studies Prep peers, then, student participants more closely aligned with the perceived importance of parents and teachers, although their selections remained slightly lower. This would suggest two things: first, students at Global Studies Prep did not share the perceived importance of second/foreign language of their teachers and parents; this points to potential tension in how this component was positioned in global education across groups at the school. Second, students at Midwest International, Trinity Preparatory, and Aurelius International were more in agreement with their parents and teachers on the importance of second/foreign language today; this suggests the possibility of distinct differences in how second/foreign language was positioned across schools as well as the ultimate creation of different understandings of global education across schools.

Figure 3.4. Perceived Importance of Second/Foreign Language by School: Students

Survey question: "How important is learning second or foreign language(s) in education today?"

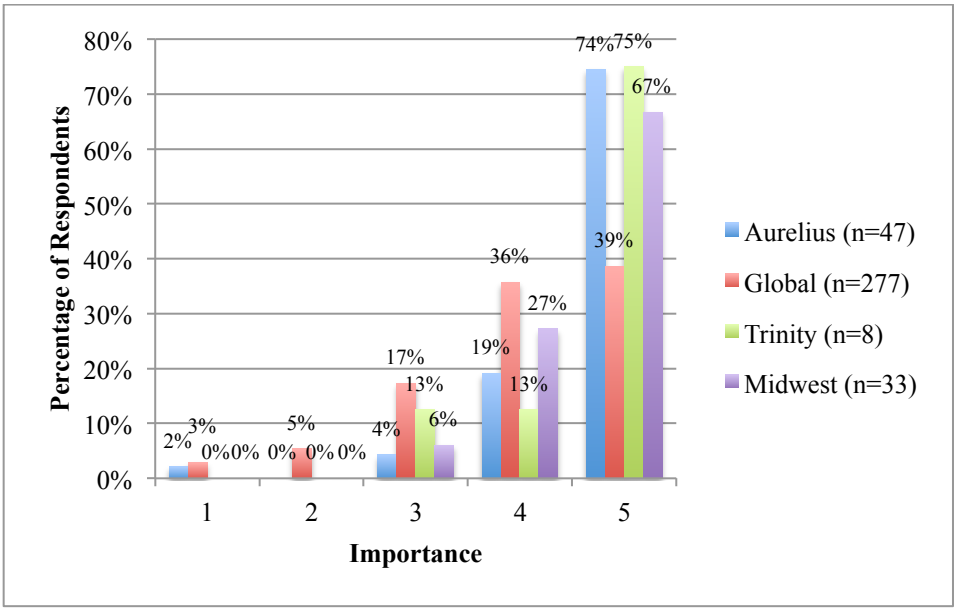


Figure 3.4. Bar graph representing students' perceived importance of second/foreign language in education today across schools. N=369. Data have been rounded to whole numbers to improve readability. International Charter is not included as their students did not participate in the survey. Focal school students are not included due to small sample size. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

In and of themselves, however, these findings do not provide the means to drawn substantive conclusions about different positionings of second/foreign language or, as a result, what this might mean for larger understandings of global education. That said, the subsequent open-ended question that asked participants to explain how important they perceived second/foreign language to be in education did provide important contextualization of this perception and how this component was positioned in global education today. These responses were analyzed in a few ways. First, responses were inductively analyzed through multiple rounds of coding; this allowed participant discourses to emerge from the data, in line with an ecological theoretical approach. In addition, responses were also deductively analyzed based on the language discourses reviewed in the literature (see Chapter 1); this allowed emergent trends to be compared with established language discourses (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009). Finally, throughout both indicative and deductive coding processes, a critical discourse analysis approach was taken, looking to link micro-level textual features to larger societal discourses (Blommaert, 2005; Fairclough, 2001) (see Chapter 2 for an extended discussion of survey analysis). In what follows, I discuss both participant-generated discourses as well as point out any alignment with discourses from the literature review as needed.

Across the entire sample, participants positioned second/foreign language most prominently through two discourses: an *economic opportunity*[10] discourse and a *cultural understanding and awareness* discourse. The *economic opportunity* discourse positioned second/foreign language as linked to the future added benefits for jobs and the job market. The following responses highlight important features of this discourse:

> #1 Our ability to communicate with other people and countries in their language is important for our **trade, commerce, education and state of war/peace**.[11] Continuing with the approach of "if you want to work with us, you must speak English" approach will not keep the **US in a competitive position globally**.
> -Parent, Midwest International

> #2 **gives students an edge** and raises their aspirations
> -Teacher, Trinity Preparatory

> #3 think foreign languages are important because in order to be **versatile workers** in whatever **career** we choose, we have to be able to **adapt** to foreign environments and communicate with people who do not speak English or whatever your native language is in order to succeed in foreign environments.
> -9th Grader, Midwest International

In the first response, the parent respondent emphasized the role of language in economics—trade and commerce—as well as its role in keeping the US competitive in a global economy; this aligns best with the common economic manifestation of a utilitarian discourse covered in Chapter 1, linking language to national economic security (Lo Bianco, 2014). However, the second two responses go beyond a simple economic discourse: Quote #2 demonstrates the reduction of language as an individual "edge" or added value on this competitive job market while Quote #3 illustrates the perceived need for future workers to prepare for fast-paced, unstable working conditions and the role of language in preparing for that reality through words like "versatile" and "adapt". These responses illustrate that this economic opportunity discourse at times aligned with a neoliberal language discourse: the increasing reduction of language to a marketable, commodifiable, and technicized skill beyond a simple economic utilitarian discourse (Block et al., 2012; Lo Bianco, 2014) and used to demonstrate allegiance to the neoliberal marketplace (Bae & Park, 2016; Park & Lo, 2012).

In addition to—and often paired with—this economic opportunity discourse, participants across the whole sample also frequently indexed a second discourse: a *cultural awareness and understanding* discourse, as seen in the following responses:

> #4 Learning a second language makes you understand there are **other cultures in the world** but also helps **you connect to that language's culture(s)** so that it's not just an understanding but you can experience and live it.
> -Parent, Aurelius International

[10] To support identification of the discourses of second/foreign language enumerated in survey data, discourse names are italicized.

[11] The use of bold in data excerpts is used throughout the dissertation to indicate segments that will be highlighted in subsequent analyses.

#5 We tend to forget that there is a whole different side of the world. We need to educate our selves because we aren't all just living as individuals and divided in order to learn more and to know more we have to be educated on **all cultures, races, and languages**.
-11th Grader, Trinity Preparatory

#6 This study provides **insight into and greater appreciation of other cultures** and allow the students to consider the position of their own culture **in a larger context**.
-Teacher, Trinity Preparatory

As seen in the above quotes, this discourse centered largely on cultivating knowledge and appreciation of different countries, culture, and peoples (Quotes #4, #5) as well as gaining a larger perspective of the world (Quote #6). In this more general question, respondents did not always offer clarity on the geographical contextualization of this awareness or understanding—international or world cultures and peoples versus local or national cultures and peoples. More clarity on this contextualization will become salient in the next section on which languages were considered most important to learn. Taken as a whole, this discourse aligned closely with the idealistic discourse laid out in Chapter 1: language learning as a humanistic endeavor aimed at cross-cultural understanding and appreciation (García, 2009; Kubota & Catlett, 2008).

In addition to these prevalent discourses, less prevalent or less common discourses were also reproduced by participants as they explained language's importance in education today. For example, at times, these common discourses of cultural understanding and awareness and economic opportunity were contextualized by a particular motivation:

#7 Because as **wars get worse** more refugees come to other nations to seek help, and as other countries offer more help to other people **more languages and cultures are mingling**.
-6th Grader, Aurelius International

#8 We are **becoming more global every day**, and if my children can get a headstart on learning more languages, they will be further ahead in the workforce
-Parent, Midwest International

#9 I think **as the world gets smaller** being able to communicate in more than one language is essential
-Teacher, Aurelius International

As we can see here, this motivation was a sense of increased interconnection on a global scale—the defining characteristic of globalization and this *globalization* discourse (Blommaert, 2010; Kumaravadivelu, 2008; Rizvi, 2007). This interconnection took different forms—from general yet greater connection (Quote #9) to connections between world economies (Quote #8) to connections between international peoples and cultures (Quote #7). Some participants also discussed this interconnection in terms of its local or national manifestations, such as in relationship to local immigration patterns; this was less common than the international contextualization, however.

In addition to contextualizing second/foreign language's importance within globalization, language was also at times seen by some participants in terms of cognition or *cognitive development*:

> #10 If a second language is learned through immersion, the benefits go far beyond simply being bilingual. The changes it appears to make in the brain, making it more **nimble** and able to more easily handle **complex and unfamiliar information** or situations is very important.
> -Parent, Global Studies Prep

> #11 When you learn another language, it makes you **smarter**. It also really helps you learn other languages, and it even helps you learn English, because you start to see how words are formed, which can help you with **remembering words and how they are spelled**.
> -11th Grader, Aurelius International

This cognitive development discourse positioned language as a way to improve learning, memory, and intelligence (Quote #11) as well as to create cognitive flexibility and dexterity in students (Quote #10). This points to an understanding of both language as well as global education in terms of individual and personal development.

Another less prevalent discourse that often co-occurred with other discourses like the cognitive development discourse was a more generic *communication* discourse:

> #12 A lot of languages are disappearing because no one learns them anymore so as the languages get bigger and essentially down to maybe a couple dozen or so languages spoken in the next few decades it will be very important to **speak multiple languages to communicate with more people effectively.**
> -12th Grader, Global Studies Prep

> #13 Learning a second or even third language allows you to **more effectively communicate with a larger segment of our world's population. Communication is key to relationship building.**
> -Parent, Midwest International

As seen in the above excerpts, this discourse linked the importance of language learning to communicating easily and effectively with others. While the results of communication were specified in other discourses, this was not the case in this discourse; rather, the defining feature of this discourse was a lack of specification of the results of communication through language. All in all, then, this generic discourse did not give much insight into how second/foreign language was positioned in education more broadly or the resulting understandings of global education.

Some survey participants also cited the importance of international travel when explaining the importance of second/foreign language learning today:

> #14 That way when **you travel you are not confused** or have to keep asking questions to a guide
> -7th Grader, Midwest International

#15 It is a great experience for students to learn a second language. **If they are visiting another country, it is great to interact and understand the language with the locals.**
-9th Grader, Global Studies Prep

Here we see that, in this *travel* discourse, language was linked to communicating with local peoples in the context of exploring other countries (Quote #15) as well as navigating international contexts with more ease and flexibility (Quote #14). This discourse could admittedly tie into more elite and elitist conceptualizations of global education, grooming students to take their place amongst a jet-setting upper class (Hull & Hellmich, in press). That said, this travel discourse could also at times align with a (potentially) less elitist cultural understanding and awareness discourse, as seen in Quote #15—using the context of international travel to learn about and appreciate local cultures. Similar to the communication discourse, then, this discourse remains largely ambiguous in terms of how language was more broadly positioned, in terms of itself and of global education.

Another less prevalent discourse reproduced by some survey participants contrasted with these past discourses: rather than positioning language in terms of its benefits, a minority of participants positioned language in terms of its *unimportance*:

#16 Learning a second language is extremely **useless** in today's society because **everyone knows or is expected to know English.**
-12th Grader, Aurelius International

#17 **The United States communicates fine in English**. There should be no reason why we should learn another language
-10th Grader, Global Studies Prep

#18 When you go to **different countries you can understand different languages** and speak it but **when your in America people pretty much only speak English**.
-9th Grader, Global Studies Prep

We can note a few prominent features of this unimportance discourse. First, there was a nod to the wide-spread use of English in the world as a whole (Quote #16) as well as in the United States (Quotes #17, #18). In addition, there was also the perception that learning additional languages outside English would not be beneficial in the United States (Quote #18); this indicates a perception of English's dominance in the United States. While perhaps not wholly erroneous, this discourse does marginalize or ignore the large—and increasing—percentage of multilingual American communities (Ryan, 2013). It also adds a new layer to understandings of second/foreign language as well as the potential for its perceived unimportance in larger understandings of global education.

As predicted by an ecological understanding of discourse, participants often indexed multiple discourses[12] at once. Consider, for example, this quote from a parent at Aurelius International:

> Contributes to opening towards the world / Increases competitiveness / Encourages new perspective / Trains memory

In this quote, the parent reproduced three discourses: a cultural understanding and awareness discourse ("Contributes to opening towards the world" and "Encourages new perspective"); an economic opportunity discourse ("increases competitiveness") and a cognitive development discourse ("trains memory"). This co-presence and overlapping was very common, with multiple discourses cropping up in respondent answers. The most common pairing was the two most prominent discourses: an economic opportunity discourse and a cultural understanding and awareness discourse. This mix in discourses confirms the messy terrain outlined in Chapter 1 as well as the tension and potential contradiction between understandings of language as well as global education more broadly.

Despite this general mix in discourses, there were some differences across school groups (parents, teachers, and students). Parents, for example, positioned language within an economic opportunity discourse more often than other groups. Conversely, teachers tended to cite an economic opportunity discourse less than other school groups. These trends would suggest a few things. First, parents might have been more closely attuned to and concerned with the future economic competitiveness of their students and the potential for second/foreign language to bolster that competiveness than teachers or students themselves. Second, these differences across groups suggest potential tensions between teachers or students and parents over the role of language in a global education.

Despite this difference, both parents and teachers positioned language within a globalization discourse, citing language's importance in terms of economic opportunity or cultural understanding and awareness as stemming from an increasingly interconnected world. Moreover, parents and teachers both cited this discourse more than students. This could indicate that the interconnected nature of the world today was more salient for parents and teachers than it was for students.

Students as a whole group were very mixed in the language discourses they reproduced. This mix is in keeping with the more mixed opinion of language's importance that students expressed in the first question. Moreover, this mix also likely reflects the fact that student respondents were in the process of forming their worldview, appropriating and reworking the complex field of discourses available and reproduced by parents, the school, and additional centers of authority (Blommaert, 2010) in line with an ecological theorization of discourse.

Despite this general mix, there were some differences in students compared with other groups. For example, the unimportance discourse came up almost exclusively with students. This is not surprising: as we saw in the importance they ascribed to language, students were less convinced of second/foreign language's importance in education today than adults. Moreover, this discourse cropped up most among students from Global Studies Prep; this aligns with the previous section and the fact that students at Global Studies Prep perceived language as less important than their peers as well as than adults at their school and across all survey schools.

[12] Admittedly, the multiplicity seen here and throughout the study could stem in part from the construction of the discourse categories themselves; this represents a limitation of the study to be further discussed in the final chapter.

In addition, while students as a whole group less often situated second/foreign language learning's importance in terms of globalization when compared with parents and teachers, they positioned language more often within a travel discourse than parents or teachers did. While this was a less common discourse compared to the much more prominent economic opportunity and cultural understanding and awareness discourses that students much more often drew on, it does point to an awareness of interconnection in their understanding of second/foreign language. This awareness could stem from the discourses that parents and teachers used to position and promote second/foreign language in school and home environments, indicating influence from higher organizational levels (Kramsch, 2002; Larsen-Freeman, 2013). It could also indicate that, for students, the complexities of globalization were more comprehensible and digestible in terms of travel.

Student differences could also be identified across schools, pointing to context-based differences in how groups understood and positioned second/foreign language. At Trinity Preparatory, for example, economic opportunities were very infrequently cited in rationales for language's importance; rather, cultural understanding and awareness was the most common discourse cited by students. This was in contrast to Global Studies Prep, where an economic opportunity discourse was more commonly cited than a cultural understanding and awareness discourse among students.

Outside students, there were additional differences in explanations of language's importance across schools. For example, while across the board teachers did not position language within an economic opportunity discourse as much as parents did, teachers at Global Studies Prep did not cite this discourse at all. This contrasts with Midwest International, where teachers more often reproduced an economic opportunity discourse, although not as much as parents. Another interesting difference across schools came from Aurelius International. While parents as a whole group consistently cited an economic opportunity discourse, Aurelius International parents bucked the trend, citing a cultural understanding and awareness discourse more than an economic opportunity discourse.

International Studies Charter also stood apart in its discursive emphasis on cultural understanding and awareness in positioning second/foreign language: teacher across the board almost exclusively indexed this discourse in discussions of second/foreign language's importance. Interestingly, teachers at this school reproduced this discourse in two specific ways, as evidenced by the following two quotes:

> #19 We live in a global world and opportunities are very limited for people who only speak one language. Speaking only one language is like being **illiterate in XXI century**.
> -Teacher, International Studies Charter

> #20 Students should be exposed to a second language as soon as they can. It is essential for them to become citizens of the world by speaking more than one language. Monolingualism is being **illiterate in the XXIst century**.
> -Teacher, International Studies Charter

First, both of these teachers reproduced a connection between monolingualism and illiteracy in the 21st century. This connection has been attributed to Gregg Roberts, the World Languages and Dual Immersion specialist for the Utah State Office of Education, who is quoted in a 2013 *Times Magazine* article as saying "Monolingualism is the illiteracy of the 21st century" (cited in Kluger,

2013, para. 6); the repetition of this connection suggests a similar understanding of language and its role in education and society as a whole across teachers. Second, the similarity of the phrasing or voicing of Roberts' quote suggests that teachers at the school had been exposed to this concept and connection at the school itself as a part of current efforts to emphasize language at the school (Personal communication with International Studies Charter Principal, November, 2015). This suggests that particular discourses of second/foreign language were explicitly circulated in some global school environments. It also suggests the impact of these school-sponsored discourses on teachers' articulated understandings of language; this links into the hierarchical influence of discourses sketched out in ecological theory, as the discourses of higher organizational levels (e.g., the school institution) influence lower levels (e.g., teachers) (Kramsch, 2002; Larsen-Freeman, 2013).

More broadly, these differences in how second/foreign language was positioned across all schools, including International Studies Charter, also indicate that, while there were some group trends across the whole sample, global schools and groups were also distinct. This underscores the nuance within the larger group trends and indicates that global schools attracted and/or developed unique cultures around second/foreign language as well as, by extension, global education.

What Languages and Why?

The first two questions on second/foreign language began to sketch an understanding of how different school actors, groups, and schools positioned second/foreign language through the discourses they reproduced. This understanding was expanded in the second set of questions on second/foreign language: after a general indication and explanation of language's importance, participants were asked to identify which second/foreign languages were most important for students in the US to learn and why through two open-ended questions (see Figure 3.5). These questions were intended not only to get a sense of the individual languages that global school actors perceived to be important but also to include an additional opportunity for respondents to illuminate the discourses they drew on to position second/foreign language in global education.

Figure 3.5. Survey Questions on which Second/Foreign Languages were Most Important

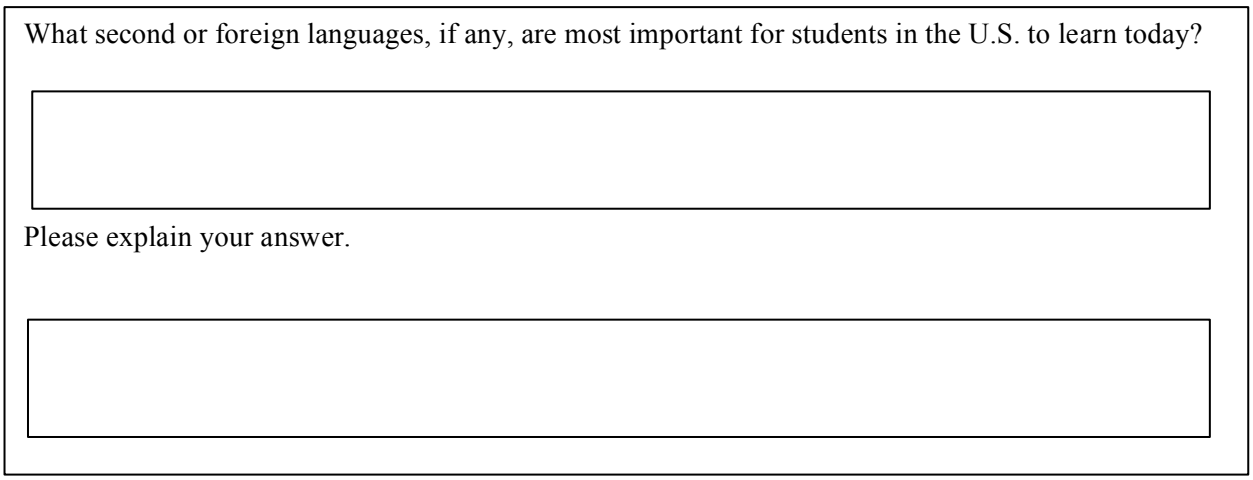


Figure 3.5. The second two questions that survey participants encountered on second/foreign language through the online platform Qualtrics.

The first three languages that respondents input in this open-ended question were tallied and analyzed; these responses are summarized in Figure 3.6. Spanish was far and away cited as the most important second/foreign language for students to learn today with 93% of respondents (n=467) selecting it as one of their top three most important second/foreign languages. Chinese was selected as the next most important second/foreign language, selected by 45% of respondents (n=226); French came next, selected by 30% (n=153), and Arabic came fourth, with 12% (n=61) of respondents selecting it among their top three most important second/foreign languages.

Figure 3.6. Most Important Second/Foreign Languages for Students in the US to Learn: All Respondents

Survey question: "What second or foreign languages, if any, are most important for students in the U.S. to learn today?"

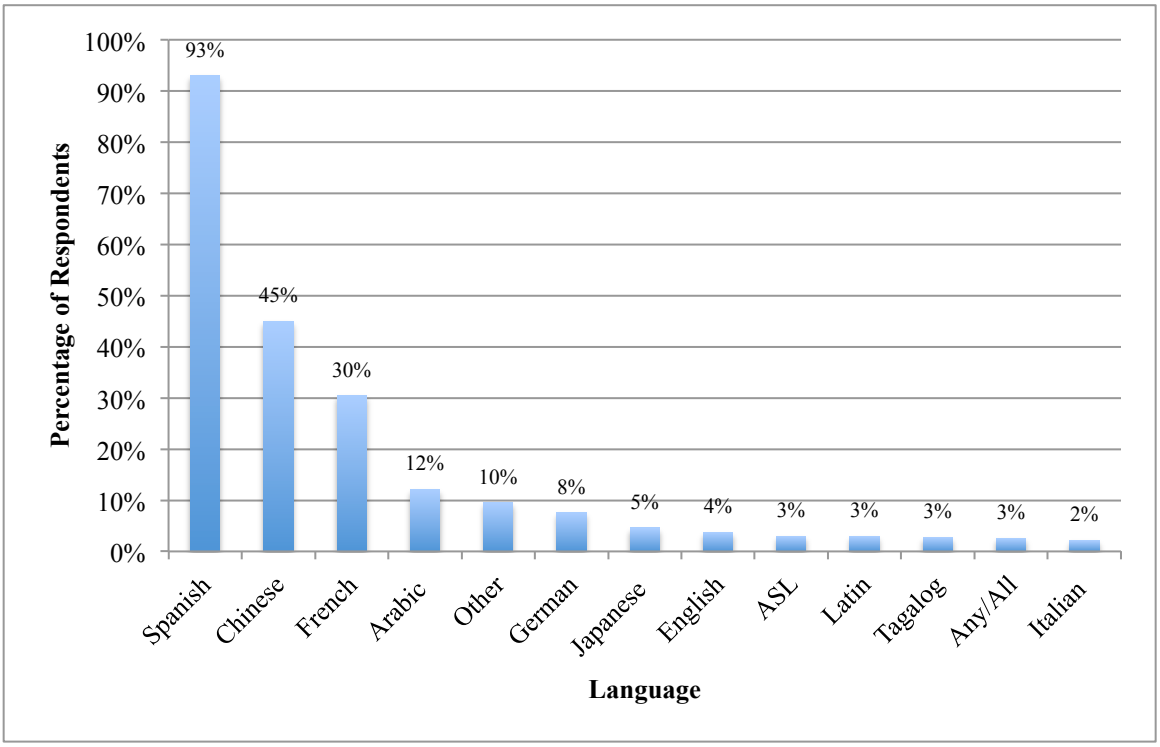


Figure 3.6. Bar graph summarizing respondents' choices for most important second/foreign languages for students in the US to learn. N=502. Data were tallied from respondents' answers to open-ended questions; the first three answers were used. The category "Chinese" is a compilation of Mandarin (n=110), Cantonese (n=11), and Chinese (n=105). The Other category was created to improve readability of the chart and included responses with 10 or less respondents; this included languages (Russian, n=10; Portuguese, n=9; Hindi, n=7; Korean, n=5; Dutch, n=4; Indian, n=3; Persian, n=2; Vietnamese, n=2; Punjabi, n=2; Malaysian, n=1; Tigyna, n=1; Urdu, n=1) and non-languages (N/A, n=1).

Drilling down into this macro portrait, differences in perceptions of the most important second/foreign languages for U.S. students to learn today could be identified. Looking at Figure 3.7, for example, parents picked Chinese as an important second/foreign language for students to learn today more than any other group (teachers, parents, and students). In addition, students often differed from adults in their selection of the most important second/foreign languages: students picked French among their top three most important second/foreign languages more often than parents or teachers did. Conversely, students selected Arabic and Chinese as important second/foreign languages less than parents or adults. This again points to potential tension around this component as well as its role in global education more broadly across school groups and within global schools.

Figure 3.7. Select Most Important Second/Foreign Languages by School Group: Teachers, Parents, & Students

Survey question: "What second or foreign languages, if any, are most important for students in the U.S. to learn today?"

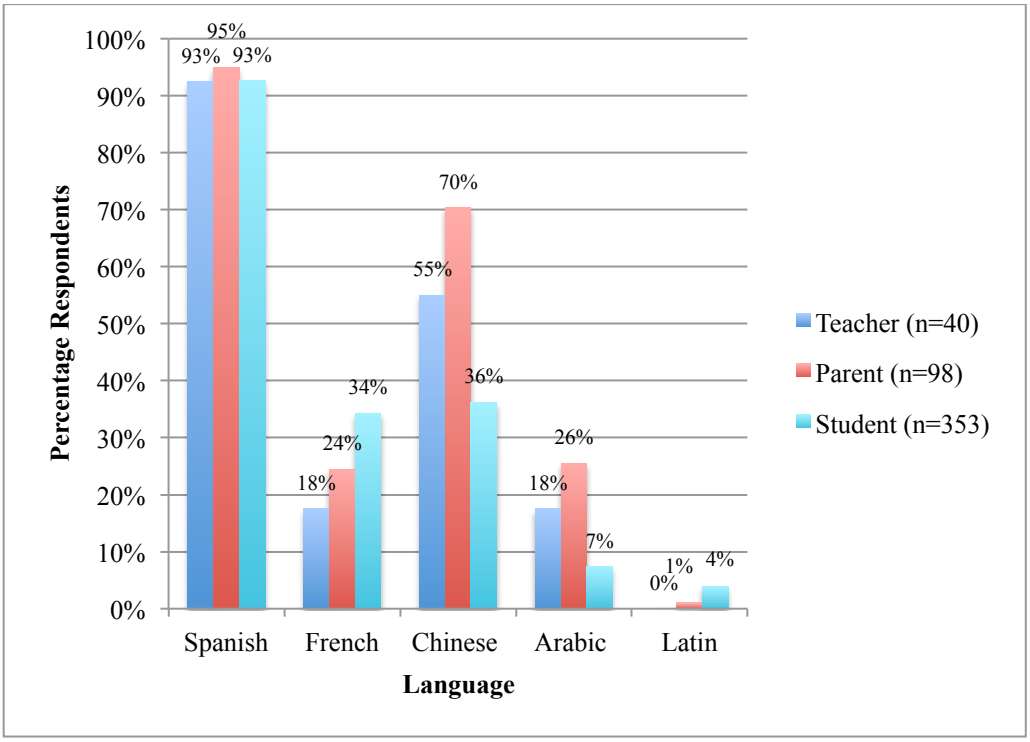


Figure 3.7. Bar graph representing differences among teachers, parents, and students in selection of top three most important second/foreign languages for students in the US to learn. N=502. Second/foreign languages represented here were taken from the larger list of respondent-produced languages in order to highlight differences found across these three groups. Administrators and staff, whose numbers were very small and therefore difficult to generalize from, were not included to improve readability. Data have been rounded to whole numbers to improve readability.

As was the case with second/foreign language's perceived importance, a closer look at differences across schools helps to explain some of the differences in perceptions of important

second or foreign languages. Looking first at Global Studies Prep (see Figure 3.8), the school as a whole selected Chinese and Arabic much less frequently as important second/foreign languages for students in the US to learn than other schools. This lowered frequency was similar across groups within the school. This suggests that, as a whole, Global Studies Prep did not see Chinese and Arabic as important as other schools did; moreover, this suggests that while there may have been differences across groups, there were also differing perceptions and positionings of second/foreign language across schools.

Figure 3.8. Select Most Important Second/Foreign Languages by School

Survey question: "What second or foreign languages, if any, are most important for students in the U.S. to learn today?"

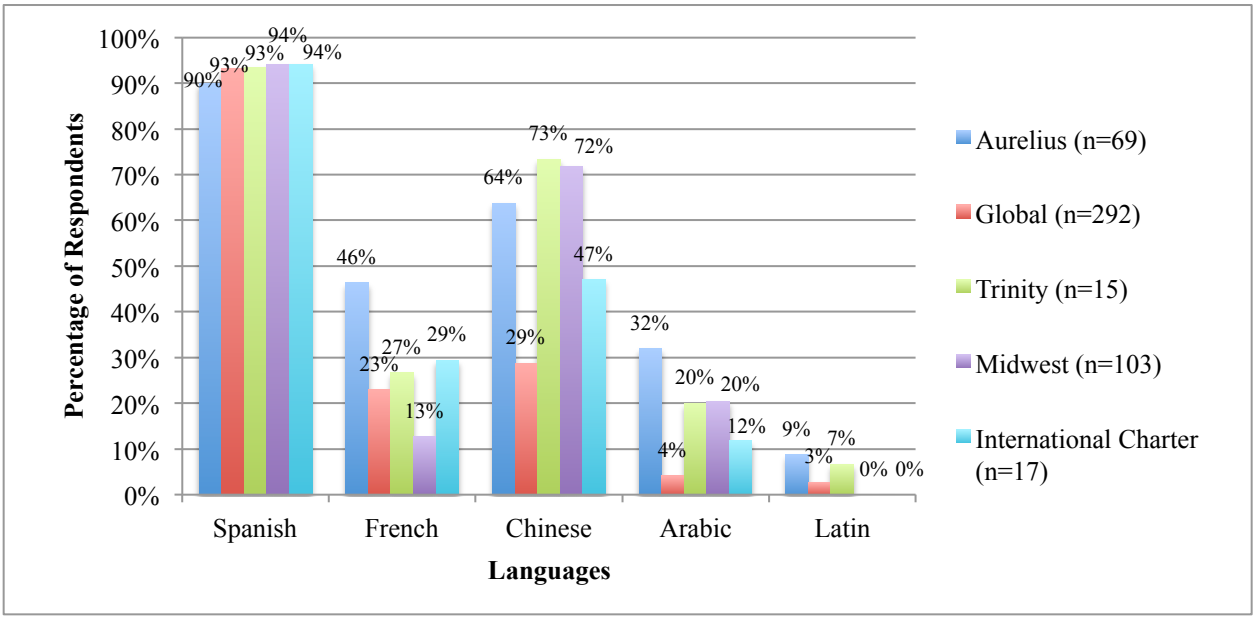


Figure 3.8. Bar graph representing differences among survey schools in selection of top three most important second/foreign languages for students in the US to learn. N=502. Second/foreign languages represented here were taken from the larger list of respondent-produced languages in order to highlight differences found across schools. Data have been rounded to whole numbers to improve readability.

In addition, the size of the student sample size from Global Studies Prep explains much of the lowered selection of Chinese and Arabic among all students. Indeed, when looking at the selection of Chinese across students (Figure 3.9), Global Studies Prep students clearly differed from their peers at other schools, much less often selecting the language as an important one for students to learn. This again points to school-based differences across groups, illustrating the diversity and nuance in how second/foreign languages were positioned in global education.

Figure 3.9. Comparison of Student Selection of Chinese and Arabic as Important Second/Foreign Languages by School

Survey question: "What second or foreign languages, if any, are most important for students in the U.S. to learn today?"

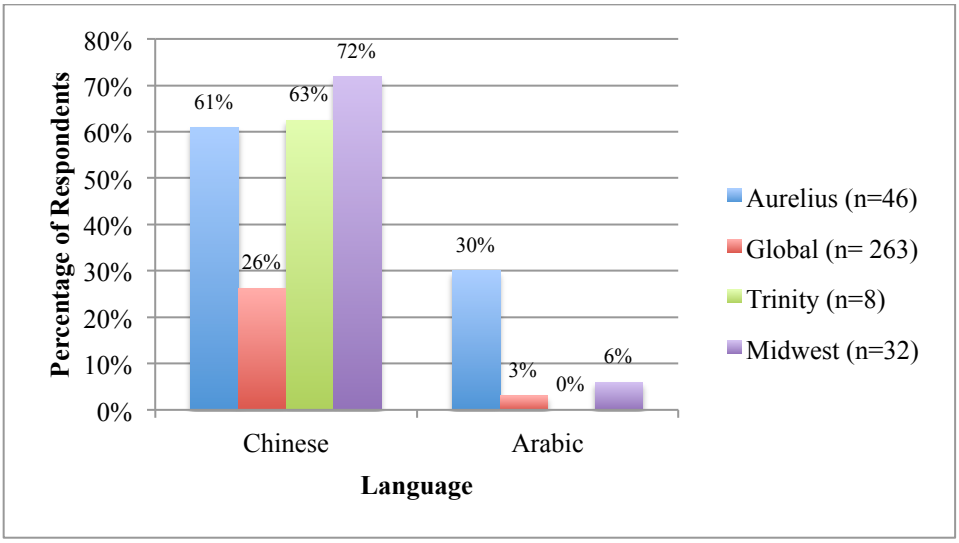


Figure 3.9. Bar graph representing differences among students in selection of Chinese or Arabic among top three most important second/foreign languages for students in the US to learn. N=353. Data have been rounded to whole numbers to improve readability.

This comparison of students across schools also reveals an infrequent selection of Arabic by students at Global Studies Prep, yes, but also by Trinity Preparatory and Midwest International students: only 6% of students at Midwest International selected Chinese and no students at Trinity Preparatory did. This stands in stark contrast to Aurelius International students, 30% of whom selected Arabic. This high percentage of Aurelius International students who selected Arabic as an important second/foreign language aligned with the school as a whole: compared to other schools, school actors at Aurelius International selected Arabic as an important second/foreign language more frequently than other schools (see Figure 3.8). This elevated status could be due in part to the fact that Aurelius International offered Arabic courses, making it a more salient choice for school actors. That said, both Midwest International and Trinity Preparatory also offered Arabic: while 20% of all respondents from these two schools selected Arabic—more than Global Studies Prep (4%) and International Charter (12%), who did not offer Arabic—, Aurelius International still proportionally selected it more (32%). A more compelling reason for this difference may come from geography: located in the southern United States and in a region with heavy ties to the oil industry, Aurelius International's comparative preference for Arabic as an important second/foreign language could stem from the school's local economic context. This would suggest an economic rationale behind language learning at Aurelius International in addition to school- and context- based differences in how language was positioned within global education.

Indeed, analysis of respondents' rationales for their language selection revealed the prevalence of such a rationale as well as additional language discourses that shed additional light on the different language choices and positionings across groups and schools. The most

prominent discourse among all survey participants was a *numbers* discourse—rationalizing second/foreign language selection in terms of the number of individuals who speak that language. This was expressed in a few different ways. For example, some participants cited languages as common or commonly spoken around the world:

> #21 These languages are the ones **most commonly used**
> -7th Grader, Midwest International School

> #22 The rise of the Spanish language is drastic especially in the United States and Chinese is the **most spoken language in the world**
> -12th Grader, Trinity Preparatory

More commonly, participants cited the current or anticipated size of a particular population:

> #23 In the U.S., Spanish is important to engage with the **large community of speakers now residing in the country**. Mandarin allows students to access another growing superpower in areas of business, government, and education. Arabic and French are the **languages of a large number of people in the world** who are suffering from poverty, war, starvation, and homelessness.
> -Teacher, Trinity Preparatory

> #24 Spanish for the **large numbers of Spanish speakers**, especially native speakers, in the U.S. Chinese because of the rising role of China on the world stage.
> -Administrator, Aurelius International

> #25 Spanish because we live in a city with a **large percentage of Spanish speakers** and we live in close proximity to Mexico / / Arabic in order to understand the complexities of the Arab world / / Chinese because it is the **language of 1/5 of the world's population and increasingly important in the global business world**.
> -Teacher, Aurelius International

In its most basic form, such as in Quote #21, the numbers discourse did not reveal much about how language was positioned in education or in society more broadly; rather, it simply referenced a quantity of speakers or commonality of the language. As several of these quotes suggest, layers of contextualization were at times added, specifying the location of the people at the heart of the numbers discourse: in the world (international contextualization, Quotes #22, #23, #25), in the US (national contextualization, Quote #24), or in a specific locale (local contextualization, #25). National and international contextualizations were most common across the whole group while a local contextualization was less common. As illustrated in most of these quotes (e.g., Quote #25), these contextualizations were not mutually exclusive; rather, participants often layered them together in their answers. Despite this contextualization, the numbers discourse remained largely ambiguous in and of itself, without much indication as to the role language was perceived to play in global education or in society more generally.

Interestingly, we might also dig deeper into this discourse by positioning it in relation to globalization. Throughout history, there have always been more or less speakers of particular

languages. For example, there have long been a large number of Chinese speakers. However, the salience of this language and its relevance to American students arguably stems from the increased interconnection and awareness that accompanies globalization. Looking at the different languages that were selected in relation to this numbers discourse, we can go a step further: while there are certainly many Chinese speakers in the world today, there are also many Hindi speakers; however, Hindi was rarely selected as an important language for students in the US to learn today. The number of speakers as a rationale for learning a particular language, then, becomes more specifically linked to a different kind of relevance, arguably an economic relevance. In other words, we might conclude that, rather than simply the number of speakers of language, it's the number of speakers framed within a particular globalization and economic framework that ultimately matters within this discourse.

Although less prominent than the numbers discourse, additional discourses were also reproduced in participants' explanations of the languages that they selected. One such discourse, the *economic opportunity* discourse seen in explanation's of second/foreign language's importance above, was also reproduced in participant explanations of important languages:

#26 This is because on one side of the U.S. we have Mexico and they speak Spanish, on the other side we have Canada and lots of them speak french. If a person knows these languages they are **more likely to get hired by a company** because it broadens the companies client members because they can communicate with more people than americans and more efficiently with people that are coming from other countries and learning english as a second language.
-Teacher, Global Studies Prep

#27 1) We're seeing a major increase in societal communication with Central and South America; 2.) Same could be said for **our major economic partners in the world**, India and China; 3.) Arabic has demonstrated itself as an increasingly important language due to the volatility and global political impact the Arab world and the Middle East in general has had; 4.) French is an important one (which I might have ranked higher than Arabic, actually) for the reason that it is one of the major languages of Africa, and I believe will be of **rising economic and social importance** in the next century.
-Parent, Midwest

Here again, we see linking language to the economy (#27) in line with an economic-utilitarian discourse as well as the commodification and added-value of language for individual returns on a rapidly-changing global marketplace (#26), in line with a neoliberal language discourse (Block et al., 2012; Duchene & Heller, 2012b; Lo Bianco, 2014).

Another related discourse that did not surface in participant discussions of second/foreign language's importance was a *power* discourse:

#28 My parents always tell me that Asian countries are **soon to rule or be a dominant race** around the world, I think it would be good to learn just in case.
-9th Grader, Global Studies Prep

#29 Those 3 languages are most **dominant** right now
-10th Grader, Global Studies Prep

#30 Spanish speaking individuals are a growing community in the United States, so it is important to understand the language of people you will be communicating with on a regular basis. Arabic is important because of the growing number of people who are emigrating from the Middle East, as well as this language can assist in getting a job within the government is a student so chooses. Chinese is important to know because **China is one of the world powers**, and we want to be able to communicate effectively with this country.
-Teacher, Trinity Preparatory

In this discourse, language's value and larger positioning were linked to the strength or dominance (Quotes #28, #29)—present (Quotes #29, #30) or anticipated (Quote #28)—of that language and the people or nations who speak it. This discourse is arguably a power-forward manifestation of a utilitarian discourse and the established trend of language popularity linked to world events (Lo Bianco, 2014), including what peoples and countries are perceived to wield power. Moreover, this positions language learning and global education as both a defensive and offensive move: learning a language to both align with as well as potentially compete with established and up-coming world powers.

An additional discourse beyond the numbers discourse was also present in some rationalizations of selected important languages, as illustrated in the following excerpts:

#31 Spanish because so commonly spoken in the US / Mandarin because many people speak around the world and China is a growing power / **Arabic/Russian because conflict resolution and living peacefully requires communication**
-Parent, Midwest International

#32 The first two for commerce, the **last for intelligence**.
-Parent, Global Studies Prep

While not as prominent as the economic opportunity discourse, this *national security discourse* was present among survey participants responses, positioning language as key to issues of national intelligence, (Quote #31), security, and defense (Quote #32); this is similar to the positioning of language by many state and national organizations seen in Chapter 1 (Klein & Rice, 2012; U.S. Department of Education, 2012).

Interestingly, while this national security discourse was reproduced in discussing specific languages, it was not brought up in participants' discussions of language's importance overall in the previous section. Conversely, these open-ended explanations for which languages were most important did not yield a strong cultural understanding and awareness discourse, a discourse that was very prominent in the previous section and in previous positionings of second/foreign language. Moreover, the other less common discourses—communication, travel, and cognitive development—reproduced by participants in explanations of second/foreign language's importance were similarly reproduced less in respondents' explanations of which second/foreign languages were important.

On the one hand, these discrepancies between discourses reproduced in explaining second/foreign language's importance (the first two questions on the survey) and what specific second/foreign languages were important (the second two questions on the survey) could be explained by the larger, most prominent discourse in this language choice section: a numbers

discourse that linked language choice to size of a population. As mentioned above, this discourse means very little in terms of larger understandings of language and how it is positioned in education and in society more generally when reproduced on its own. Conceivably, then, the different discourses that were reproduced in the first section and that were largely absent from the second (e.g., cultural understanding and awareness, cognitive development, etc) could have remained salient in participants' understandings of language, although left unvoiced. On the other hand, however, this might also suggest that the act of selecting languages and imagining their context of use exposed different understandings and positionings of language. Specifically, it may reveal differences in how individuals conceive of language in principle versus in practice. This theme will be explored in more depth in Chapter 4.

Across groups, the above trends in discourses remained largely consistent: most groups (teachers, parents, and students) first situated second/foreign language selection in terms of numbers, with an economic opportunity discourse as next most reproduced discourse. Similar to the previous questions on second/foreign language's importance, parents reproduced a stronger economic opportunity discourse than teachers or students, although this difference was not as strong as it had been with the importance of second/foreign language. This again suggests that second/foreign language was more prominently positioned in terms of economic benefit and market value by parents than by other school groups, setting the stage for potential tension and conflict on how groups within global schools understood second/foreign language and global education more broadly.

More differences came out when looking at each school, confirming and complicating the portraits of language begun in the previous section. For example, while parents at Midwest International strongly reproduced a numbers discourse with an economic opportunity discourse overlay, they also reproduced a cultural understanding and awareness as well as a cognitive development discourse more than parents at other schools when discussing which languages were important to learn. This complicates the portrait of Midwest International parents begun in the previous section: while these parents reflected the larger trend in favoring an economic opportunity discourse when discussing language's importance, their stronger indexing of cultural awareness and cognitive discourses here suggests added nuance and complication.

Conversely, while parents at Aurelius International did cite a cultural understanding and awareness discourse in explaining which languages were important for students to learn today, their reproduction of this discourse was not as strong when discussing which languages were important to learn as it had been when explaining language's general importance. This also complicates the emerging portrait of Aurelius International, illustrating the imbrication and co-presence of economic opportunity with cultural understanding and awareness discourses. Taken together, these examples from Aurelius International and Midwest International illustrate how global schools and groups positioned second/foreign language in complex and at times conflicting ways, suggesting both the overlap of these multiple discourses as well as the complicated nature of global education that would result.

In contrast to Aurelius International and Midwest International, teachers and parents at Global Studies Prep were largely consistent with previous responses: teachers did deploy a numbers discourse, but they less often added an economic opportunity discourse to it, in line with the cultural understanding and awareness discourse that they favored in the previous two questions. In addition, Global Studies Prep parents aligned with the larger parent group and with their previous positioning of second/foreign language, most often adding in an economic opportunity discourse to their numbers discourse.

Similarly, while International Studies Charter joined the rest of survey respondents in most commonly citing a numbers discourse as well as an economic opportunity discourse in explaining their rationalization for which second/foreign languages were most important, they much more often cited a cultural understanding and awareness discourse alongside this economic opportunity discourse when compared to other schools:

> #33 Due to growing "minority groups" in the United States, knowledge of these two languages would allow for different communities to **better understand each other and coexist.**
> -Teacher, International Studies Charter

> #34 All have great influences in the American culture and there are a great number of American citizens that speak these languages. **They also can be useful in business and friendships.**
> -Teacher, International Studies Charter

This solidified the portrait of International Studies Charter in terms of language begun above: the school had a clear emphasis on language learning in terms of cultural understanding and awareness. International Studies Charter and Global Studies Prep, then, stand to illustrate that discourses and positionings of second/foreign language could also be more consistent across groups in a global school.

Interestingly, there was a final school-based—or perhaps global school type-based—difference to note in terms of the layer of contextualization added to the numbers discourse: referencing a local context was more common at Global Studies Prep, with adults and students, than at other schools. Conversely, while referencing international contexts was less common at Global Studies Prep, referencing international contexts of use were much more common at Aurelius International, Midwest International, and Trinity Preparatory for both teachers as well as students. International Studies Charter had an even mix of international and national contextualizations. While not perfectly aligned and certainly meriting additional inquiry, this may suggest a more intensified outward, international orientation of the elite, private variety of global schools (e.g., Aurelius International, Midwest International, and Trinity Preparatory) while a more national and local focus for school serving more socioeconomically diverse communities (e.g., Global Studies Prep and International Studies Charter).

Summary

While a complete analysis of the language discourses at these different survey schools was not targeted in the research design, we can conclude a few things from this overview. First, these survey schools give us a sense of the wide range of second/foreign language discourses circulating in global education around the country and that global school actors reproduced in positioning second/foreign language in global education: *economic opportunity*—with and without neoliberal accents; *cultural understanding and awareness*; *globalization*; *cognitive development*; *communication*; *travel*; *numbers* of people who speak or will speak the language; the perceived *power* of those people; and what this power might do for *national security*. While several of these discourses aligned with those outlined in Chapter 1 (e.g., cultural understanding and awareness/idealistic discourse; economic opportunity/utilitarian or neoliberal discourse; national security/utilitarian discourse), there were additional discourses that were found to drive how school actors positioned second/foreign language in global education. Importantly, all these

different discourses would ultimately build up different understandings of global education: for example, global education as about individual human development, as would be the case with a cognitive development discourse, or global education as about a more relational, outwardly focused learning, as would be the case with a cultural understanding and awareness discourse.

Moreover, as discussed in Chapter 1 and as predicted by an ecological framework, these discourses overlapped within individual responses, indicating that global school actors' understanding and positioning of second/foreign language were influenced by multiple discourses at once. The most common pairing in explanations of language's importance, for example, was both an economic opportunity discourse and a cultural understanding and awareness discourse. This multiplicity across schools and groups as well as within individual school actors' responses points to an even more complicated terrain on which global education was being forged than that which spurred the study.

Second, this survey also provides an opportunity to note what discourses were not brought up by survey participants. For example, there was little to no indication of how survey participants understood the nature of language—for example, in the modernist or post-modernist terms outlined in Chapter 1. This was likely due to the nature of the questions themselves as well as the superficial nature of the survey instrument. In addition and for reasons what will become clearer in Chapter 4, it is striking that while survey participants did situate second/foreign language in terms of globalization, the vast majority did not address critical issues such as social inequality, climate change, and forced migrations due to war or natural disasters that stem from globalization, although some respondents did bring up immigration, particularly to the United States. We could speculate that the potential of language in addressing these issues could have been included when referencing the more ambiguous discourses, such as the communication discourse or the numbers discourse. However, explicit reference to these looming social, cultural, and political issues was not made by most survey respondents; this leaves us to wonder to what extent language was seen as playing a role in these issues as well as to what extent global education was oriented toward these issues.

Third, this overarching portrait provides a sense of variation by group (teachers, parents, and students) and by school. Parents, for example, tended toward more utilitarian or neoliberal understandings of language—seen in the reproduction of the economic opportunity discourse—than teachers and students did. Moreover, students reproduced a vast mix of discourses at the same time that they were more divided on language's importance in education today; this suggests the developing nature of students' worldviews as they considered the different discourses of language that surrounded them. As mentioned throughout the chapter, these differences across groups could set the stage for differing and tension-filled understandings not only of language but also global education more broadly.

In addition, there was not much identifiable variation across school type—type of global school or type of language program. Admittedly, this was not the goal of the survey, which was not distributed to a representative sample for each type school. Rather than being the basis for conclusions, this suggests the need for further, more detailed study of the different types of global schools to understand the variation in discourses amongst them.

Fourth and finally, the survey also provided an opportunity to see the influence of these discourses on school actors. For example, at International Studies Charter, the repetition of specific phrases as well as the highly consistent trends among International Studies Charter school actors could suggest two things: 1) the presence of school-based discourses that were distributed officially by the school, and 2) the influence these discourses had on teachers,

illustrated by the fact that they were taken up and reproduced in survey responses. This points to the influence of higher organizational level on lower organizational levels in line with ecological theory (Kramsch, 2002; Larsen-Freeman, 2013).

That said, we can also see that the influence of these higher organizational levels did not lead to automatic appropriation of those discourses. Students at Global Studies Prep, for example, did not automatically take on the perceived importance of second/foreign language of their teachers and parents. This illustrates the non-linear nature of discourse reproduction as well as the multiple centers of authority that now influence discourse reproduction (Blommaert, 2010).

All in all, the survey paints a rich, complicated portrait of the discourses of second/foreign language in global education today across different kinds of schools and across the country. It simultaneously sets the stage for an inquiry into understandings of second/foreign language at the focal school, The World First School, in the next chapter and underscores the necessity of this inquiry: the multiplicity of discourses, richer even than what was covered in Chapter 1, that global school actors reproduced requires more focused and detailed study along ecological lines to uncover how these discourses interact to position second/foreign language within global education.

CHAPTER 4: FOCAL SCHOOL FINDINGS—SECOND/FOREIGN LANGUAGE AT TWFS

Introduction

With a better understanding of how a larger spread of global schools and global school actors positioned second/foreign language through discourse in the previous chapter, I turn now to take a closer look at how one school—The World First School (TWFS)—and its community members positioned second/foreign language through discourse and what this might mean for understandings of global education.

This case study centered on semi-structured interviews with teachers (n=4), administrators (n=2), parents (n=3), and students (n=8) as well as participant observations of two classrooms (Upper Elementary and Junior High) (Glesne, 2010; Miles & Huberman, 1994; Spradley, 1979). Interview questions used in this chapter focused primarily on perceptions and uses of second/foreign language in education today.[13] Participant observations used in this chapter focused on amount, context, and purpose of second/foreign language use. Data (interview transcripts, field notes, and observation recordings) were analyzed in a few ways. First, data were analyzed through multiple rounds of inductive coding; this allowed participant discourses to emerge from the data, in line with an ecological theoretical approach. In addition, data were also analyzed through deductive coding, with these deductive codes stemming from the second/foreign language discourses reviewed in the literature (see Chapter 1); this allowed emergent trends in the data to be compared with established discourses (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009). Finally, throughout both inductive and deductive coding processes, a critical discourse analysis approach was taken, looking to link micro-level textual features to larger societal discourses and scales (Blommaert, 2005; Fairclough, 2001). In what follows, I discuss both participant-generated discourses as well as point out any alignment with discourses from the literature review as needed. (For more information on the case study design and analyses, including interview and participant observation protocols, see Chapter 2.)

Overall, the focal case study of TWFS revealed a range of different, complex, and often overlapping language discourses that clustered around two major questions: 1) what is the role of language? and 2) what is language? For each question, I first discuss how each school group at TWFS positioned second/foreign language, detailing the different articulated and embodied discourses that were reproduced. After chronicling these discourses, I conclude with implications for global education, for ecological theory, and for learners.

What is the Role of Language?

In line with an ecological theorization of discourse and with survey findings, TWFS participants reproduced multiple discourses of language's role in education: second/foreign language was positioned in terms of expanded cultural understanding and awareness, cognitive benefits, and family as well as jobs, globalization, and, as we will see throughout the chapter, a layer of uncertainty or even fear in the face of globalization. At times, these discourses aligned

[13] Study instruments, including interview questions, asked participants to describe their understanding of second/foreign language and digital technology "in education today" rather than specifically in "global education." This was due to the wide-ranging and often ambiguous understandings of what "global education" means. Given the operationalized definition of global education used in the study and given that all schools in the study met that definition, I make the interpretive connection between "global education" and "education." For more details on this within the study design, see Chapter 2. For a discussion of the limitations of this design as well as next steps, see Chapter 7.

with the discourses outlined in the literature review and in the survey. However, this was not always the case. To respect the complexity of participants' responses as well as to respect the study's ecological frame, I detail the discourses that participants reproduced and point out any alignment with other discourses as necessary.

Administrators. Administrators situated second/foreign language in similar yet distinct ways. Lisa, the Head of School, understood language to be a relationship between language, culture, and an expanded worldview. First, for Lisa, language learning enabled a person to deeply and profoundly understand another culture: "when you speak the language," she said, "there is a depth of understanding that is really difficult to get when you don't speak the language" (Interview, March 4, 2015).

Learning a culture through learning language subsequently led students to understand and accept the different perspectives, backgrounds, and worldviews that other individuals bring to the table. This "wider perspective of the world," rooted in language/culture learning, developed curiosity, rather than fear, in the face of difference (Interview, March 4, 2015). Lisa explained that:

> Instead of [difference] being something that rings an alarm because "someone said some thing that didn't fit into my picture." You know so instead of it being a really weird thing this person you know "what are they talking about?" It's more a curiosity "I'm wondering what you mean." (Interview, March 4, 2015)

For Lisa, then, second/foreign languages were positioned as a way to gain a more profound understanding of the world and, as a result, as an antidote to fear of difference. This understanding strongly aligned with the cultural understanding and awareness discourse reproduced by survey respondents in their explanations of language's importance in education today. Moreover, it aligned with the idealistic language discourse reviewed in the first chapter: language as a way to understand other cultures and to see the world from multiple perspectives (García, 2009; Kubota & Catlett, 2008).

An additional language discourse that Lisa reproduced centered around the perceived cognitive benefits of language learning:

> There's another aspect of this which is you know just simply developing a multilingual mind. The multilingual mind has a flexibility and brain studies have certainly shown in the past 20 years or whatever number um it's it does it is different. And this is the reason why we've gone for three and not just stay at a bilingual program. But that the the three brings them into the multilingualism where they develop a flexibility of mind that is quite unique. (Interview, March 4, 2015)

Here, Lisa underscored the creation of the "multilingual mind," characterized by "flexibility" (lines 1-2, 5), that came with learning multiple languages. In addition to opening a student's mind to the world at large, then, Lisa positioned language learning as impacting the mind in a more literal sense through enhanced cognitive capacity. This was consistent with the cognitive development discourse seen with survey respondents.

Lisa's positioning of language in terms of cognitive benefits as well as cultural understanding was confronted by other understandings of language and its importance. She noted that some parents valued one of the non-English languages taught at TWFS (Spanish or French) more than the other, to the point where they would ask that their child not learn the other language:

1 So this is where again we struggle, and we try to help people understand again this is
2 about you know the understanding. That this is about multilingualism. You know if you
3 pick another language, pick your language; it doesn't matter. We happen to offer these
4 three, but it doesn't really matter what language you offer. (Interview, March 4, 2015)

Here, Lisa first established a division that will be developed throughout the rest of the study: the school vs. parents. Her use of "we" in reference to the school (line 1, 3) and "you" (line 2) in relation to parents drew a line in the sand between the two groups. Moreover, Lisa reinforced the language discourse seen above: in juxtaposition to parents, Lisa and the school viewed language learning in terms of the understanding—cultural and cognitive—that stemmed from knowing multiple languages, rather than about the language itself.

A subsequent discussion of this same struggle corroborated this discourse. Lisa described how societal and parental perceptions of an "important language" had changed over the years:

1 About 10 years ago? The important language was not Chinese. The important language
2 was Japanese. Before the Japanese economy fell. Every school was offering Japanese.
3 And nowadays when you offer people you know most of them go "why would you want
4 to learn Japanese?" Well why not? (Interview, March 4, 2015)

Rather than offering the "important" language of the time, Lisa went on to cite the school's primary goal as "to help our students understand that any language is useful. Any language is useful because it just simply enhances the experience and opens the mind" (Interview, March 4, 2015).

We can see a few things here. First, Lisa noted how perceptions of "important" languages in the US have changed over time in relation to the global economy; this points to the common relationship between language choice and world events (Lo Bianco, 2014) that undergirded the economic opportunity discourse seen in the survey as well as the economic manifestation of a utilitarian discourse reviewed in Chapter 1. Second, Lisa positioned the school and its language discourse in juxtaposition to this economically-oriented discourse, rejecting a market-based mentality in favor of cognitive benefits and cultural understanding. This supports the struggle between the parents and the school that Lisa painted earlier. Third, however, Lisa's choice of the word "useful" is a curious one: she affirmed a language discourse of cultural understanding/awareness and cognitive benefits via neoliberal language (Block, Gray, & Holborow, 2012). This shows how, while Lisa contrasted her understanding of language with that of parents and the larger society, the very same discourse could creep into how she discussed language.

The Assistant Head of School, Rosa, shared some of Lisa's positioning of language, particularly in terms of the cultural understanding that grew from language learning. She noted how she personally had benefited from "an interest in me to learn more about the world" as a result of speaking multiple languages: having interacted with teachers from a range of different cultures at her English-immersion school in Central America, Rosa began "to learn not only the language itself but the culture" which made her more "culturally aware and respectful of other peoples" (Interview, April 3, 2015).

Rosa perceived these same benefits for her students:

1 So what I see in children (1.0)[14] and I have traveled with the children to the different
2 countries (1.5.) um I think they they they do it naturally. You know they can
3 communicate a peasant in Mexico in Spanish. Or they can ask somebody in Paris
4 directions. So I think to me I think that it it broadens your education. Your awareness of
5 the world. (Interview, April 3, 2015)

Similarly to Lisa, then, Rosa positioned language as broadening understanding and awareness (lines 4-5). That said, we can also question this understanding and awareness based on this excerpt. First, the context in which this understanding was taking place, international travel, is often associated with a mobile elite; this raises the question as to whether or not the cultural understanding referenced was restricted to the elite and/or restricted to an understanding of elite culture. Moreover, Rosa's example of students talking to Mexican "peasants" (line 3) conjures up images of service or mission trips, a common practice at elite schools where true engagement with local culture and cultural understanding is rarely targeted, let alone accomplished. As we will see throughout the chapter, we are left to wonder what this cultural understanding/awareness language discourse—or the idealistic one that it most closely resembles—truly meant.

One indication of what might undergird the cultural understanding/awareness discourse was introduced by Rosa: a *globalization* discourse. Rosa began our first interview by mapping out what she saw as an increased interest in language learning in the United States, driven in her opinion by three primary reasons: digital technology, a global economy, and immigration. In doing so, Rosa referenced the hallmarks of globalization: an increasingly interconnected world resulting from increased access to information, the increased movement of people, and increasingly connected economies. Moreover, she positioned the importance of language within this globalization frame: the interconnection of the world necessitated and raised interest in language learning.

This globalization rationale for language learning is common enough today; as we saw in the previous chapter, for example, an emphasis on the interconnection of people and economic markets characteristic of globalization cropped up in survey respondents' explanations of second/foreign language's importance. That said, the extended and more detailed nature of conversations with Rosa permitted uncovering an additional layer to this discourse. Take, for example, the following excerpt, taken from Rosa's explanation for why language learning was important today:

1 Well I think [language is] their **future**.[15] You know the world has **shrunk**. We're going to
2 have to work all as one. To **survive**. You know we are so many billion people in this
3 world and natural resources are **exhausting**. So we need to work together to be able—and
4 so they need to be able to communicate and not only language itself but they need to be
5 able to feel the interest in learning about the culture and the needs of the family in (1.0)
6 the middle of Algeria. You know what their needs are. (Interview, April 3, 2015)

On a first level of analysis, Rosa brought up several features of the globalization discourse: the idea that the world has become smaller and that previously far-flung places and people are now neighbors, physically or virtually (lines 1-2); and the resulting need to work as well as communicate across borders (lines 3-6). On a second level of analysis, however, we might also

[14] See p.ii for transcription conventions.

[15] The use of bold in data excerpts is used throughout the dissertation to indicate segments that will be highlighted in subsequent analyses.

sense a layer of uncertainty in relation to globalization in Rosa's use of words and phrases with sharply negative valences. For example, the world is not only smaller but it has "shrunk" (line 1). Moreover, nothing less than survival was at stake in language learning (line 2) given the crises, such as diminishing natural resources and increasing populations, facing the world (line 3). Importantly, Rosa explicitly linked language learning to addressing these crises and this uncertainty, enabling not only communication toward solving them (line 4) but also understanding how these problems impact other places and cultures (lines 4-6). Rather than globalization itself, I would argue that Rosa introduces a *fear of globalization* discourse here: positioning language learning within global education out of anxiety or fear in the face of globalization and its effects.

Concern in the face of globalization could also be seen in Rosa's discussion of the global economy and language learning today:

> 1 I think the financial situation opens up a lot of—a lot of of the of roads you know and
> 2 simply because the—[sigh] commerce (1.5) has improved tremendously from one
> 3 country to the other. I think people in in business here? has [sic] had the need to
> 4 communicate (1.0) with people in other parts of the world. **And if they [sic] children—**
> 5 **their children are not being educated to face that challenge.** You know their future
> 6 world. **Then you know I think they will be at a disadvantage.** (Interview, April 3, 2015)

First, Rosa described the current financial and business world as one that is "opened" (line 1), with many "roads" or connections between different countries; this indexes the globalization discourse and the increased economic connection between countries. More than a simple globalization discourse, however, we might also read elements of concern in this excerpt. For example, the notion of "opening" could indicate both possibility and also the uncertainty that comes with increased unknowns and connections, as we saw above. Moreover, similar to previous excerpts, the future—here in terms of the future global economy—was framed in negative terms—a "challenge" (line 5): students without a multilingual linguistic skill set would be less competitive, less prepared to take on these future unknown realities (lines 5-6). This excerpt could also index, then, overarching concern in the face of the changing nature of business relations as well as fear of increased competition on a global market, both of which drive the need to prepare students for that competition through language learning.

In addition, the above excerpt also could also showcase a neoliberal language discourse. As discussed in Chapter 1, a neoliberal language discourse denotes the increasing and increasingly intense reduction of language to a marketable, commodifiable, and technicized skill decoupled from identity and history (Block, Gray, & Holborow, 2012; Cameron, 2002; Duchene & Heller, 2012). In this quote, Rosa noted that business now required communication with the rest of the world (lines 3- 4) and subsequently positioned language learning as a skill set that, when lacking, hurt students in this economic arena or, conversely, helped students when present. In other words, Rosa highlighted language's role on the global marketplace and in entrepreneurial endeavors in a globalized world as well as the responsibility in the face of that marketplace to learn additional languages in keeping with a neoliberal language discourse.

Taken together, while both Lisa (Head of School) and Rosa (Assistant Head of School) reproduced a cultural understanding and awareness discourse, they also differed: Lisa emphasized a cognitive development discourse while Rosa introduced an additional discourse that linked language learning to globalization and potential fear of its effects. Rosa and Lisa help

to set the stage, then, for the different struggles to come around the role of language and the implications of this role for global education at TWFS: the centrality of the cultural understanding and awareness discourse among adults as well as questions about what may drive this and other roles.

Teachers. Similar to Lisa and Rosa, teachers at TWFS reproduced different discourses in their understanding of language's role today within global education. In line with teachers from survey schools, TWFS teachers' most often positioned language as a way to open students' minds to the world and to gain additional perspectives. Sophie, the Junior High teacher, summed up this shared discourse in the following way:

> Borders don't mean the same thing that they did anymore and I think that you know the world being a much more accessible much more global place I think languages have a special place for that. **To be able to get beyond our borders and understand what's happening in the world**. **Even in terms of being able to read newspapers that aren't from where you are at and to get a different perspective on some of the events that are happening.** (Interview, February 17, 2015)

Here, second/foreign language was primarily positioned as a way to help students see beyond the typical limits of a myopic worldview (lines 3-4) and to access as well as understand multiple perspectives on world events (lines 4-6).

Similar to the additional perspective cited by Sophie in line 5, French teacher Anaïs cited the acquisition of "another point of view" that came through language learning: "students can become interested in other cultures than their own [through learning other languages]. They can become interested in what is happening outside their own country." She continued, noting that:

> I know that it would be great to study a language or multiple foreign languages earlier to be able to see that **there are other cultures, other ways of thinking and that differences enriches, in fact.** Difference enriches your own culture. (Interview, May 29, 2015)

In other words, this cultural opening, shared by all the teachers at TWFS, was rooted in language's potential to open students' minds to different perspectives on the world at large as well as their own culture and country. As was the case with Lisa and Rosa, we can link this to a cultural understanding and awareness discourse and to an idealistic language discourse (García, 2009; Kubota & Catlett, 2008): language as a way to understand other cultures and to see the world from multiple perspectives.

Teachers at TWFS also brought up cognitive benefits to language learning when discussing its role: both Sophie and Anaïs described these benefits in terms of a "flexibility of thinking" while Upper Elementary school English teacher Ella and Spanish teacher Carlos framed them in terms of problem solving. Specifically, Ella described the connection between problem solving and cognitive benefits in this way:

> I think [learning language] also builds a little more **resilience** in the student. That they are able to **problem solve in a different way**. I think that they can look at the situation and go "this is what I need to do." I think it also is about "I'm hitting a wall. How can I get past this wall? I I want to say 'apple.' I don't know the word. It's a fruit. It's has—it's red, it's crunchy. Trees." You know and they're learning how to describe and get kind of past it. I think that kind of resilience having that in language shows up in all

7 the other subjects. (Interview, March 11, 2015)

What Ella described here was an enhanced ability to work around obstacles and barriers afforded through language learning: framed first in terms of finding the words to get a particular message across (lines 3-5), Ella expanded this ability to other subjects, extending the cognitive benefits to a larger range of spaces (lines 6-7). Alongside the cultural understanding/awareness language discourse, then, teachers also reproduced a cognitive development discourse, positioning language in terms of its intellectual benefits.

In addition, a few teachers also positioned language in terms of the economic market. Sophie referenced this most directly:

1 Like it or not, in most places in **most work places** you're going to be **dealing with**
2 **people from different cultures. So the ability to do that is really important**. The
3 ability to step out of your own **cultural perspective and to extend an understanding**
4 **that might be different**. I think is very very important in **work places nowadays.**
(Interview, February 17, 2015)

Here, Sophie outlined how the cultural understanding and additional perspectives (line 3) that come with language learning—and that were also cited as a primary positioning of second/foreign language by all the teachers at the school—could also be positioned as a way to improve and to serve business relations; this aligns with the commodification of language and culture that arise from a neoliberal discourse, seen in Chapters 1 and 3 (Block et al., 2012; Duchene & Heller, 2012). In line with survey results, this was a minor language discourse among teachers at TWFS; only two teachers brought up this positioning of language throughout interviews. That said, this particular quote does suggest that a neoliberal language discourse could at times undergird the cultural understanding and awareness language discourse that Sophie and other teachers cited.

However, the cultural understanding and awareness discourse could also arguably be linked to the globalization and perhaps even the fear of globalization discourse that we saw with the Assistant Head of School, Rosa. For example, Sophie's quote used to illustrate teachers' focus on understanding additional perspectives, reproduced below, also included components of global uncertainty:

1 **Borders don't mean the same thing that they did anymore** and I think that you know
2 the **world being a much more accessible much more global place** I think languages
3 have a special place for that. To be able to get beyond our borders and understand what's
4 happening in the world. Even in terms of being able to read newspapers that aren't from
5 where you are at and to get a different perspective on some of the events that are
6 happening. (Interview, February 17, 2015)

Here's Sophie's rationalization for the importance of cultural understanding via language learning was rooted in a particular understanding of the world: one that is much more interconnected and marked by porous borders (lines 1-2), indexing a globalization discourse. A level of uncertainty could also arguably undergird this sentiment: the fact that, for Sophie, the world's borders "don't mean the same thing" suggests that the traditional role of borders—offering protection to different nation states as well as defining national identity—no longer held true (line 1). This points to potential concerns not only of shifting populations across borders but also of shifting identities both across and within borders as a result of globalization.

A globalization and fear of globalization motivation for cultural understanding could also be seen elsewhere in teacher interviews. For example, Ella used global comparison as a central frame for the importance of language today:

> You look at you know **many other countries**. **Most other countries' students**. And the population in general speaks more than one language. Europe. Latin America. A lot of people speak Spanish and English. Or whatever. Portuguese Spanish and English. Or (1.0) so I think that [language learning] gives the children a more (1.5) uh well (1.5) **more acc-more access to the rest of the world you know? It opens it up more.** (Interview, March 11, 2015)

The opening up of the world that we see in line 5 did not only equate to opening for cultural understanding; rather, this opening of the world through language learning was firmly situated within a comparison to—and competition with—international peers and contextualized within porous national borders (lines 1-3). This underscores concern of keeping up with a shifting global arena produced by increased connection. In other words, American students needed to learn language not necessarily only because it was important for their own personal growth and development but because it was also necessary for the hyper connected and competitive contemporary world.

Similarly, the notion of "opening," took on different meaning in this excerpt from Sophie:

> I think that [language learning] also **opens doors**. **You never know what's coming you never know where you may end up.** And the more languages you speak the more doors that are open. (Interview, February 17, 2015)

Here, Sophie first referenced "open doors" (line 1), potentially reproducing a cultural understanding and awareness discourse: language learning opens doors to a greater understanding of the world. However, she then described the scenario that she looked to prepare her students for and for which these open doors where necessary: a scenario in which the world was changing quickly and in which the future was next to impossible to predict (lines 1-2). More than that, though, Sophie painted this changing and unpredictable future in distinctly ominous tones: the phrase "you never know what's coming" suggests a state of vigilance in anticipation of potential future crises just around the corner while "you never know where you may end up" speaks to the perception of physical mobility, volatility, and perhaps even vulnerability. In other words, language learning in this context may have been about opening doors to understanding the world, but that understanding may have worked at least in part toward ensuring a degree of mobility needed for survival in the face of an unknown and unpredictable future. Globalization and fear of this globalized state, then, arguably drove in part how Sophie saw language and its role in global education.

Taken as a whole, teachers at TWFS positioned language in several ways, citing cultural understanding and awareness, cognitive development, and neoliberal discourses. However, the additional presence of a globalization as well as a fear of globalization discourse undergirding many of these other discourses suggests an important shift in the positioning of language by TWFS teachers and by the school within their larger efforts toward global education: seeing language as a way to expand students' awareness and understanding of different ways of being and living around the world; to develop their cognitive capacities; or to hone an edge on the neoliberal market could be, at least in part, rooted in fear of the globalized and globalizing world.

Parents. Like teachers and administrators, parents at TWFS reproduced a broad range of discourses in their positioning of second/foreign language within global education. For Marco, Anthony and Isaiah's father, expanded awareness of the world and its many peoples was central to language learning. For example, he cited "the shared humanity" that developed out of language learning: it was no longer about "us or them;" rather, learning more than one language afforded a capacity to appreciate the fundamental similarity across cultures and peoples (Interview, May 14, 2015).

Relatedly, Marco underscored the importance of an expanded perspective on the world itself that came with learning language and culture. For Marco, language learning "just opens up the world," enabling his sons and students in general to get "out of your own little world" into a larger one (Interview, May 14, 2015). In contrast to many of the participants in the survey and fellow TWFS community members, Marco did not reproduce multiple language discourses; rather, he almost exclusively indexed this cultural understanding/awareness discourse: language as a way to combat close-minded thinking, to accept difference, and to understand the expanse as well as the similarly of the human experience.

The two other TWFS parents interviewed also positioned language in terms of cultural understanding and awareness; that said, as we saw with administrators and teachers, closer analysis underscored the potential for additional discourses alongside or beneath it. Let us take, for example, the following interview excerpt with Melanie, mother of Silvia and Tyrell:

> 1 If we're going to embrace other cultures fully it would help if we could know what other
> 2 people are saying. And **in the business world** and you know wherever you go I think it's
> 3 very **it just opens up more more worlds and more levels of understanding**. If you can
> 4 understand what other people are saying help understand their cultures.
> (Interview, May 19, 2015)

There are several things to note in this excerpt. First, on the one hand, Melanie deployed words and phrases associated with a cultural understanding/awareness language discourse: embracing other cultures (line 1), understanding people and their cultures (line 4), and "opening up" more worlds and understanding (lines 2-3).

On the other hand, however, Melanie's brief but important reference to the context in which language/culture learning reaps benefits—"the business world" (line 2)—shifts our understanding of the language discourse at play: within a business context, phrases like "embracing other cultures" and opening "more worlds and more levels of understanding" come to mean very different things, such as opening new markets and brokering better, more efficient deals. In other words, positioned within a business frame, language learning is no longer in the service of more just and peaceful relations, as would be the case with a cultural understanding/awareness language discourse; rather, language learning comes to serve entrepreneurial endeavors in line with a neoliberal language discourse.

In addition, Melanie also indexed a language discourse related to globalization when discussing the importance of language learning today:

> 1 I mean we are in a very uhm you know **outside of the United States** people learn way
> 2 more than one one language. Uhm we've lots of friends who have lived or are living
> 3 outside of the US and you know their kids are learning all sorts of you know languages in
> 4 addition to Spanish and French. We have uhm very close family friends who are living
> 5 right now in Germany. They moved from France to Germany. The mom is from actually
> 6 [a neighboring city] so their kids are learning more than one language and I just think that

7 is **the way the world is**? You know here in the United States we're really pretty
8 uhm (2.0) cozy with our one language. (Interview, May 19, 2015)

First, Melanie noted that multilingualism was the norm outside of the United States (line 1, 7) and that monolingualism was the norm within the United States (lines 7-8). More than a simple juxtaposition, however, Melanie explicitly compared the US and U.S. students with other countries and other countries' students (lines 1-4) in terms of language. This comparison points to the increased connection to and competition with other countries spurred by globalization. More specifically and linking back to the emerging theme of fear of globalization, Melanie's comparison might suggest concern that the US was losing that competition: the monolingual US was failing to live up to the multilingual world and, therefore, potentially unable to keep up with international benchmarks.

Similar to Melanie, James's mother Christie indexed a cultural understanding/awareness language discourse that was problematized and complicated by additional discourses upon closer inspection. Take, for example, this interview excerpt:

1 Uhm but I think that [language learning] also just creates **a greater sensitivity to the**
2 **world**. The **ability to understand** that kind of people in all different places speak
3 different like it's a concept that you grow up with. You recognize that where you go there
4 are all these different languages learned. And I mean that that's one of the big uh most
5 appealing about TWFS. These children are **not growing up thinking this little world is**
6 **the only way to live.** I mean they have this whole concept of people living very
7 differently in other countries. (Interview, May 26, 2015)

In many ways, Christie's discussion of the importance of language reproduced a cultural understanding/awareness discourse: she noted a "greater sensitivity to the world" (line 1) and an expanded worldview (lines 5-6) as the principle benefits of language learning.

That said, an alignment with additional language discourses was also evidenced at several points during our interview, primarily around the notion of "relevant languages." For example, Christie's discussion of why language was important included not only a family connection to James's Hispanic heritage but also its "relevance:"

1 Uhh and [my husband] you know wanted his kids to have that connection and it's it's
2 **relevant here in [the western US]**. I grew up in [the South] so I knew that there was you
3 know we're right next to Mexico so I thought **it would be valuable as well**. (Interview,
May 26, 2015)

We start to see here a conflation of "relevant" (line 2) and "valuable" (line 3) as well as a link between location and value for Christie: Spanish was relevant or valuable in the western US, as it was geographically close to Mexico and, presumably, as it is populated by many Spanish speakers.

This "relevance" of language also came up in discussing the third language offered at TWFS: French. According to Christie, "If we could drop French we would" (Interview, May 26, 2015). However, the school stood firm in offering all three and expecting James to learn all three. Christie had several reasons for wanting to drop French. First, she cited James's learning differences that made learning to write difficult: "we've asked them not to teach him ma-, force him to write in French," Christie explained. "Like come on we don't really care about it. Let's get some of the basic things." In other words, forcing him to write and learn in a third language

threatened what they perceived as more "basic" subjects given his learning differences (Interview, May 26, 2015).

In addition, Christie noted that, unlike Spanish, the family could not support James at home in French: James' father, who immigrated to the United States as a young child, spoke exclusively in Spanish to the boys, extending their language learning beyond the classroom. This was not the case for French.

Lastly, in addition to being less relevant to her family, Christie found French to be less relevant and/or valuable in general:

> [French is] just not (2.0) it's **not as relevant** of a language. I mean I went and uhm (1.5) I studied French in college I went and I studied in Paris my junior year and you know I was somewhat proficient. And I don't speak a word of it cuz I came back and I'd met my goal which was to go study abroad and then **I haven't used it since**. (Interview, May 26, 2015)

Here, we can see that Christie did not see French as widely usable outside France or, at the very least, in the United States, based on her experiences using the language; as such, French was not seen to be as relevant of a language. This puts the accent on the *usability* of a language to Christie's understanding of a language's relevance or value.

A juxtaposition between French and Chinese gives further indication of what "relevant" may have meant for Christie: Chinese was important to learn "because globally that is a relevant language" (Interview, May 26, 2015). This emphasis on the *global* relevance of Chinese suggests a link to common discourses surrounding that particular language today: the Chinese language is often associated with the rising number of Chinese speakers as well as the role of China in the global economy (Stiglitz, 2015). "Relevant" for Christie, then, was arguably linked into a language's value and usability, in terms of her own family, yes, but also in terms of its perceived prominence on local and global markets. This aligns with several possible and intersecting positionings of language. First, this could be a manifestation of the power discourse seen in the survey: situating the importance of Chinese and French in terms of the power of its speakers and/or nations. Relatedly, this notion of relevance for Christie could indicate an understanding of language in utilitarian or neoliberal terms, positioning language as a skill set whose value is linked to market demands. Finally, we could also bring this notion of relevance back to a larger globalization or fear of globalization discourse: in reproducing discourses of China's global dominance, Christie was perhaps not only positioning language in terms of future profitability but also in terms of future preparedness: learning Chinese over French would better prepare her son for the future world, marked by unknowns and uncertainty.

Embodied language discourses. The imbrication of these multiple discourses by parents at TWFS mirrored to some extent parent themes from the survey: parents from survey schools explained language's importance more often in terms of economic opportunity with neoliberal accents, although cultural understanding and awareness also remained salient. The focal study of TWFS permitted an additional lens that extended beyond participants' beliefs about language *in principle* to beliefs about language *in practice*: how parents acted in relation to language within a global education. At TWFS, this embodied parental language discourse manifested when "important" subjects came into question, as Spanish teacher Carlos noted:

> This is generalizing I guess but a lot of parents tend to see foreign language as a cool thing the children can learn you know. "Oh it's cool learning another or an extra language." Uhm because I see that as some of the child [sic] start facing some kind of

> problems in school especially math you know or English they immediately say "well let's let's cut off the language section." (Interview, March 4, 2015)

This notion that languages were important up until "priority" subjects like math or English were threatened came up several times over the course of interviews with teachers and administrators. For example, Junior High teacher Sophie described parental reactions when students faced challenges in "important things" as "Let's get rid of the languages. Let's teach the important things in English" (Group interview, March 19, 2015). The Head of School, Lisa, echoed this parental fear that language learning threatened learning more valued subjects, noting that "alarms start going off particularly if you're dealing with math" (Interview, March 4, 2015). These reported actions were in part corroborated by Christie and her attempts to remove French from James's school day (Interview, May 26, 2015).

Parental actions at TWFS indicated several things. First, language was ultimately not as important or highly valued as it had been reported by parents interviewed for the study: while language was seen as a "cool" added value, it was ultimately positioned by parents as a less-important or second-tier subject via their actions.

Second, what becomes salient in parsing parent reactions was the fear—"the alarm bells," as Lisa put it—that drove them: fear that their children would not excel in math or English. On the one hand, this reaction could be situated in neoliberal terms: these subjects are often seen as the pinnacle of both national and global educational market places, making parental reactions an adherence to market demands and a demonstration of how a market-mentality has permeated outside economic arenas (Harvey, 2005). On the other hand, this reaction could also arguably stem from deeper fears: by securing subjects perceived to be highly valued on the global education and job market, parents could have been responding to and assuaging larger fears of increased interconnection and instability, working to adequately prepare their children to compete in ever-shifting arenas. In other words, a fear of globalization discourse could also undergird the neoliberal as well as cultural understanding and awareness discourses that parents reproduced.

The resulting situation was a constant struggle over the role of language at TWFS, both for parents as well as for the school itself. For parents, this tension was eloquently outlined by Upper Elementary school English teacher Ella:

> Parents have these really big things they want for their children. Especially in a Montessori school you have generally self-selecting parents that are you know it's a private school they're paying to be here and they want their children to be happy. They want their children to be brilliant. They want their children to be all these things that you cannot quantify, right? They're uh so so but then they want to measure it on a standardized test. So there's like they have these mome-these big moments of contradiction. (Group interview, March 19, 2015)

Ella underscored that parents at TWFS were pulled in many directions by the multiple discourses of language and education swirling around them, wanting a range of things for their children that did not necessarily align: to cultivate an understanding of the world through language learning, yes, but also to be successful on a shifting, competitive, and increasingly globalized college and job market.

In addition, Ella's exclusive use of "they" in reference to parents sets up a clear distinction between the school and parents, an "us versus them" relation, when it came to language. We also saw this distinction made by Lisa (Head of School) above: juxtaposing

parental desires for "useful" languages with the school's desire to cultivate cultural understanding. Employing the same "they" vs. "we" discursive positioning as Ella, Carlos described this school-parent relation in the following way:

> [Some parents] always blame the language, but we always defend it. So **it is like kinda like a battle**….We try to explain the whys—why it's important. Then we get into a lot of—these languages especially French and Spanish some of the words like especially in math you know they're very similar. So the language itself is another language so (1.5) at the end of the day they still say "well but" we say "no, that's what we do and that's not going to change unless the child has a learning disability." That's when we you know might reconsider. (Interview, March 3, 2015)

In this "battle" over language, Carlos painted the school as on the defensive when it came to language: explaining why language is important (line 2) and remaining firm in offering both languages (line 5). This defense and battle were corroborated by other interviews with parents: Marco, for example, likened Lisa's resolve to maintain a multilingual school to that of a "dictator," (Interview, May 14, 2015) and Christie described failed attempts to remove French from James' school day (Interview, May 26, 2015).

That said, the relationship between parents and the school was inherently more complex than a clear-cut battle. As we saw above, teachers and administrators at TWFS were also pulled in multiple directions by different language discourses; moreover, like parents, teachers and administrators indexed similar discourses, including a fear of globalization discourse, in their understanding of language and its role today. The difference, it would seem, was the perceived importance of language in global education and a globalized world more generally at TWFS: the school positioned language as central to education while parents ultimately did not. This finding nuances survey results seen in the last chapter: while parents and teachers could agree on the high importance of language in global education today, the diverging imagined roles of language in principle and in practice could make for a complex as well as tense scenario on the ground.

Students. TWFS students both reproduced the discourses that circulated in their school and home environments as well as remixed them. For example, while TWFS adults did not situate second/foreign language in terms of communication, Upper Elementary student Ilana noted how learning Spanish and French allowed her to "speak to people who…don't speak English" both in the world more broadly as well as locally. Along the same lines, Silvia, another Upper Elementary student, also situated the importance of language learning as "you can communicate with more people." As was the case with the communication discourse seen in the survey, this was a largely generic positioning of second/foreign language—what this communication served—economic competitiveness, for example, or cultural understanding—was not specified.

Ilana also cited family as the primary motivation for learning language. With a French Canadian heritage, Ilana was now able to communicate with her relatives when they visited. As she wryly put it "[Speaking French] is better than having no idea what they're saying" (Interview, May 7, 2015). Upper Elementary student Sara echoed this importance of family in language learning: "Well I think that when you learn a language, it's gonna be really helpful even like cuz like most of my family speaks Spanish so it's really important for me to learn Spanish" (Interview, May 2, 2015). Learning Spanish at TWFS, then, supported Sara's connection with her relatives and stood as a central part of the importance of learning language for her. This family discourse came up very rarely in the survey—in only a very small fraction of participants'

responses and positionings of second/foreign language; in addition, it was not brought up by adults at TWFS, aside from Christie, James' mother. While only indexed by a few of TWFS students, it was proportionally a more salient discourse and more prominent positioning of language at the focal school than at survey schools, underlining a school-based as well as group-based difference in how second/foreign language was positioned in global education.

For Sara, language learning was also central to education. She explained that:

> 1 And I think [language] will also help you like cuz I heard you like when you go to [col-
> 2 lege] they **also they really like if you're really educated and stuff.** And if you know
> 3 three languages then that's **a big part of education**.

In this excerpt, we see a few discourses. First, Sara made the connection between language and getting into college, positioning language as an asset on the educational market (line 2); this could arguably be a manifestation of an educational version of the utilitarian or neoliberal discourse seen with other TWFS participants. However, the way that Sara finished the quote—knowing three languages is "a big part of education" (line 3)—could also reference a cultural capital discourse, positioning second/foreign language as a distinction of high class and educational status. This cultural capital discourse did appear from time to time in the survey data, but not often; this again points to the multiplicity of discourses that could drive and position second/foreign language in global education.

Sara also cited a general curiosity about languages that separated her from her peers. For her, learning a language was "learning to see how different languages do things differently" (Interview, May 2, 2015). This orientation to language came through particularly clearly in Sara's reason for wanting to learn Chinese:

> 1 For me I just think it would be awesome to know Chinese. Like I don't know why just
> 2 just just to know Chinese I think would be so cool. I just really like how it sounds. And
> 3 one thing that Anthony talked said that one thing in China Chine in Chinese that it's really
> 4 hard to learn because like if you have one like sound like /a/ you have to like it depends
> 5 what word you have to like make it like a higher pitch or a lower pitch and you're like /a/
> 6 /a/ /a/ (uses different pitches for each). And it was really funny when he was explaining it
> 7 to me. I just thought it would be really cool. (Interview, May 2, 2015)

While Sara did use one word, "funny" (line 6), that could be indicative of judgment or Othering, her more frequent use of words like "awesome" (line 1) and "cool" (line 2, 7) indicate that Sara's orientation to the language was generally positive, rooted in curiosity about the phonetic system of the language (lines 4-6). Although not a perfect match, this aligns to a certain extent with cultural understanding/awareness discourse: understanding the differences and similarities in languages and cultures (García, 2009; Kubota & Catlett, 2008).

What attracted Sara to Chinese stood in contrast to her peers as well as many of the survey respondents. As noted in the previous chapter, a third of student survey respondents listed Chinese as an important language for U.S. students to learn today. Moreover, the overwhelming discourse indexed when rationalizing this choice was a generic, quantitative one: Chinese was an important language to learn because a lot of people in the world speak it.

This numbers discourse came up for Sara's immediate Upper Elementary peers at TWFS: James, for example, labeled Chinese "the language of the future" because "the population of China is the biggest in the world" (Audio recording and field notes, June 3, 2015). Similarly, Daniel chose Chinese as important language to learn "because you know like (mimicking a rising

projectile motion with his hand, accompanied by a whistling sound)" (Audio recording and field notes, May 19, 2015). Arguably also present in James's and Daniel's contextualization of Chinese was a power discourse: Chinese and China were perceived as central to an imagined future world stage, making learning the language important.

While Sara certainly stood apart from her peers in her rationalization for learning Chinese, she also linked language to the economic market, as did most students at TWFS. In addition to citing family as an important reason for learning language, for example, Sara went on to describe how languages can come in "handy:"

1 Well maybe for like kinda like my brother he he he applied for like a job and the reason
2 **they chose him is because he knew Spanish** so he could communicate with not just one
3 person but with multiple people. And if you know three languages, I think just help you a
4 lot just kind of—Well I guess to talk if you're in business and like it's a company that's
5 really popular and so it's like all around the world and you're one of those people that has
6 to travel to all these places when you end up going to like France or any of these places
7 you can actually like know what's happening. (Interview, May 2, 2015)

Here, Sara displayed an understanding of language as linked to the job market in several ways: first, speaking additional languages made a person, like her brother, more valuable to a company because s/he could communicate with more people (lines 2-3). Second, additional languages facilitated the travel associated with international business travel that characterizes more and more industries today (lines 5-7). This aligns with the reduction of language—and the people who speak them—to an added value on a competitive job market and in business, in line with the neoliberal commodification of language (Duchene & Heller, 2012a)

This market-based positioning of language learning was echoed in the mini-interviews conducted with several students at TWFS. For example, Andy, Sheila, and Anthony, three Upper Elementary students, explained the importance of language learning in this way during a work session:

1 EH:[16] Why do you guys think learning a different language is important today?
2 Sheila: Because if you get a good job then you can travel around the world.
3 Andy: Well it can be helpful
]
4 Anthony: if you don't know some random person///Sheila: in
5 college!/// in Minecraft you can be like *konichiwa*.
6 EH: That's true. What were you gonna say Andy?
7 Andy: Like if you like for certain careers it can be very helpful. Cuz say you're like
8 from like ///Sheila: A doctor. A traveler./// Someone who travels around and
9 does business with other people if you only know English you're not gonna
10 get very far. You'd be kinda stuck to like two countries.
(Audio recording and field notes, June 3, 2015)

In this quote, we can note several things here. Sheila first interjected language's role in college admission in line 6, positioning language in relation to future educational markets. Andy picked this up and elaborated, linking language learning with expanded business opportunities outside Anglophone countries in line 3 and lines 7-10. Andy's use of the word "careers" (line 7) is an interesting one as well: a 5th or 6th grader is not likely to spontaneously think about or discuss

[16] "EH" denotes the researcher and author.

careers, a word and perhaps even a concept that is beyond this developmental stage. This could suggest that Andy was reproducing a discourse heard in his environment, parroting what others had said before in relation to language learning today. In addition, Andy specifically cited the consequences of not learning additional languages: being "stuck" in a reduced number of countries. This puts the onus on individuals to learn language, lest they be left behind in their entrepreneurial endeavors. This ties into the neoliberal reduction of language to a commodifiable skill as well as the responsibilization of individuals who must adhere to market demands, such as by learning languages, in order to survive.

In addition, this quote brings to the fore two additional points. First, Sheila's reference in line 2 ties into a minor yet salient discourse among students at TWFS: the benefits of language for travel. Here, Sheila sees travel as a possibility once a "good job" has been secured and facilitated by language learning. Similarly, when asked why it was important to learn a language today, Upper Elementary student Nira responded, "It pays off when you go to Mexico. Like when you go to Cabo. I go to Cabo." On the one hand, this discourse indexes a more elite milieu that can afford costly and luxurious excursions to resort towns, such as the one Nira and her family frequented in Mexico. This puts a decidedly elitist as well as outwardly-focused spin on language learning and its role in education as well as society more broadly today. However, the focus on travel could also be, as discussed in Chapter 3, students' understanding of globalization: at this developmental age, students could understand the complexities of globalization in terms of an ability to travel, suggesting the influence of globalization on students positionings of language.

A second point to underscore from the interaction with Sheila, Andy, and Anthony is Andy's perception of language in business, namely the seeming ignorance of the wide-spread use of English as a lingua franca in that arena. (In a similar vein, the role of English as a lingua franca or global language in business as well as other domains was not brought up by any participant at the focal school, a point to which I will return in the conclusion of this chapter.) This stands in contrast to some student survey respondents who justified language's unimportance by the role of English as a lingua franca.

An indication of where Andy may have gotten this idea as well as of how TWFS students in general came to reproduce a market-based understanding of language came in another mini-interview with Daniel and Alan:

1	EH:	So what do you guys think is important about learning other languages?
2	Daniel:	Uhhh
3	Alan:	You can use it later on for your jobs.
4	Daniel:	At least that's what the teachers say.
5	EH:	That you can use it for your jobs?
6	Alan:	And when you go on business trips you know—have to talk.

(Audio recording and field notes, May 19, 2015)

First, like Andy and Sheila, Alan saw language as useful for future jobs (line 3) and, specifically, for "business trips" in the students' imagined future professional lives in line 6. This corroborates an understanding of language as a marketable skill on a competitive job market and in the business world seen with Sara, Andy, and Sheila.

Second, in a cheeky but perceptive addition to the conversation, Daniel also evoked the role of teachers in this understanding of language: "at least that's what the teachers say" (line 4). Daniel indicated here an awareness of the different discourses swirling around him and,

specifically, that TWFS teachers used jobs-oriented language discourse to justify language learning for their students. We can wonder, then, if Andy's ignorance of lingua franca English in the business world as well as TWFS students' common reproduction of a market-based understanding of discourse did not also stem from this same teacher-produced positioning of language.

Indeed, this reported positioning of language by TWFS teachers is a curious one, as it would stand in contrast to their articulated discourses: language was infrequently positioned in terms of neoliberal or utilitarian discourses by teachers. This might suggest that a jobs-oriented language discourse may have been more compelling for a student audience, leading teachers to deploy it despite an overarching understanding of language within cultural understanding and cognitive development frames. It might also suggest that an economic-oriented positioning of language did factor more heavily into teachers' positionings of language than had been reported. All in all, this finding points to the complexity inherent in articulated discourses of language within global education and the nuance that can be uncovered from a more detailed look.

In addition to potential influences from teachers, the Head of School, Lisa, also noted how students were influenced by parental discourses:

> But some [parents] kinda get stuck with [their language preferences]. And it's it's hard for them to accept the other one and integrate it. And the kids pick up on that. The kids pick up on that and so sometimes it's you know but they'll tell the teacher "my parent doesn't think that this language is very important." (Interview, March 3, 2015)

This quote suggests that, as TWFS students learned from teachers' language discourses, they too learned from parental discourses, articulated and embodied. This stands in line with an ecological understanding of discourse: students were influenced by the discourses produced by higher organizational levels (e.g., parents and teachers), reproducing at least in part some of the discourses found there (Kramsch, 2002; Larsen-Freeman, 2002).

That is not to say that students at TWFS only or wholly reproduced these discourses from higher organizational levels. For example, in the above interaction between Sheila, Anthony, and Andy, Anthony reproduced an additional language discourse: a dedicated Minecraft player, Anthony underscored how language permitted users in online gaming environments to greet each other and to interact (lines 4-5). While an admittedly brief reference, it does point to another language discourse—language as a way to connect with distant others via online technologies—that was not reproduced by other students or by teachers or parents.

Moreover, students at TWFS differed from their teachers and parents—as well as from their peers at survey schools—in another way: aside from Sara, students at TWFS largely did not reproduce a cultural understanding/awareness discourse in their positioning of language. This could point to the fact that this discourse was not reproduced around students by parents and teachers in home and school environments, as Daniel suggested above. It could also suggest that students at TWFS did not find this discourse and subsequent positioning of second/foreign language personally compelling and did not incorporate it into their own positionings of language. Finally, it could relate to the age of students: at 11 and 12-years-old, it is possible that TWFS students were too young to fully digest and appropriate this more complex discourse.

Students at TWFS did not reproduce teacher or parent language discourses in a final way: students did not reproduce discourses of globalization or of concern in the face of globalization. While students clearly positioned language in terms of future job markets, they did not situate these markets in anxiety or fear, as some adults did. Moreover, the other discourses that students

reproduced—communication, family, travel—were not couched in anxiety or fear. This suggests that students, while likely influenced by teacher and adult discourses, did wholly reproduce them: in keeping with ecological theory, then, students drew on additional centers of authority in their appropriation and reproduction of language discourses in addition to non-linear reproduction of the discourses reproduced by parents and teachers (Kramsch, 2002; Larsen-Freeman, 2002).

Summary. Taken as a whole, this first question around the role of second/foreign language begins to sketch a portrait of how school actors at TWFS positioned second/foreign language as well as how this positioning differed across groups—addressing research questions #1 and 2. In line with an ecological perspective and in line with survey respondents, TWFS school actors reproduced a range of different discourses. Students reproduced mostly a market-based language discourse, with occasional nods to additional discourses (e.g., communication, travel, and family). For administrators, teachers, and parents, cultural understanding and awareness was a central and prominent language discourse. Differences among adults did arise, however. For example, a cognitive development language discourse cropped up among administrators and teachers and not with parents. In addition, while utilitarian and neoliberal language discourses did appear from time to time with teachers and administrators, these discourses were reproduced more prominently by parents. All that said, deeper analysis revealed a globalization discourse—with anxiety-laced manifestations related to the effects of increased interconnection, instability, and competition—that undergirded and drove some of these discourses across adults.

As we saw throughout this section, these different discourses also fed into a larger struggle over the role of language at TWFS between parents and the school. As noted above, teachers, administrators, and parents reproduced similar language discourses and positioned language in similar ways. However, teachers and administrators maintained the importance of language in words and in actions while parents acted in ways that contradicted this articulated importance of language: when push came to shove, other subjects like math and English were often deemed more important and better able to prepare their students for a global market and world. We will return to this struggle as well as the multiplicity of discourses of second/foreign language and their impact on understandings of global education in the final section of this chapter.

What is Language?

The second question over language at TWFS—what is language?—continues to build out answers to the first two research questions: how did school actors position second/foreign language through discourse? And how did these positionings differ across school actors? While the survey did not shed light on participants' understandings of language in this way, the more in-depth nature of the focal school did. Not all participants discussed or used language in ways that referenced the nature of language (e.g., parents); however, those who did indexed multiple discourses in complex ways. At times, these complexities fell in line with modernist and postmodernist understandings of language: a modernist discourse understands language as discrete, standardized units that are tightly linked to the nation-state (Canagarajah, 2013; Kramsch, 2014) while a postmodernist discourse understands language as fluid and diverse semiotic resources that are not tied to a particular language but, rather, are deployed by agentive language users to meet the needs of diverse contexts (Blackledge & Creese, 2010; Blommaert, 2010; García, 2009; Kramsch, 2014; Weber & Horner, 2012). In what follows, I detail the discourses as they were produced and point out any alignment with modernist/postmodernist discourses as necessary.

Administrators. The anxiety or fear in relation to globalization that was highlighted in the first half of the chapter remained salient within the Head of School, Lisa's, remarks on what language was. Lisa articulated an understanding of language as standardized units with firm borders, expressing, a strong belief in the "purity" of languages: while she acknowledged their evolution over time, she described this purity in terms of "definitions" or borders between languages: "the understanding, the grammar, you know, the structure of each language" (Interview, June 16, 2015).

Furthermore, Lisa explicitly articulated serious consequences of breaching these language boundaries: she explained that it was "very **dangerous** when people start to mix" because:

> You're still not going to be able to communicate properly with the people who **really** come from those cultures where that language is spoken. And therefore you **won't understand the culture** which then **defeats the purpose of the whole thing.** (Interview, June 16, 2015)

First, the "danger" that Lisa perceived in language mixing was predicated on the relationship she made between language, culture, and the ultimate goal of TWFS, described in the previous section: a deep understanding or expanded perspective of the world was gained through language and culture learning. On a superficial level, mixing languages barred students from communicating and understanding other cultures (lines 2-3), thereby making the expanded worldview and additional perspectives, the central drivers of Lisa's educational vision, harder if not impossible to reach.

That said, there are additional assumptions to unpack beyond this superficial level. First, through the use of "communicate properly" (line 1), Lisa implied that there are right and wrong ways to use language. In addition, the use of this standardized, proper language was with "people who really come from those cultures" (lines 1-2); this points not only to a perception of particular boundaries around cultures but also to individuals who embody them.

For Lisa, these cultures, peoples, and languages were tied to the nation state, as evidenced in this discussion of the "nativeness" of the teachers at TWFS:

> Because the teachers are native speakers. Because they do come, they bring culture with them um (1.0) the kids the children are able to learn something from someone who is transmitting it directly. This is not read through a book. This is not looking at a video. But the actual everyday contact with those people. And that's actually the reason why we have (.) a staff that comes from I think we have about 15 or 16 different countries. And that is part of it. That on a daily basis we deal with people from different cultures, from different backgrounds. (Interview, June 16, 2015)

Referring to teachers as native speakers (line 1) that came from different countries (line 5) or nations made clear the national rooting of Lisa's understanding of language and culture. And in rooting language and culture firmly in the nation-state, Lisa presented a very particular and very commonplace understanding of the world as a whole: one characterized by nations that have standardized and separate cultures and languages.

The processes of globalization, then, stood as an on-going threat to that understanding of the world: with rapid and intensified interconnection as well as increased flows of people and information, globalization was blurring the borders between languages, yes, but also, we could argue, between cultures and nations as well as the identities that have traditionally been built upon them. In other words, the reproduction of a modernist language discourse for Lisa was in

part rooted in globalization and concern around the change or instability that it created, calling into question long- and firmly-held beliefs about language, culture, and the world itself.

Teachers.

Articulated Discourses. Similar to Lisa, the three language teachers at TWFS[17]—Sophie, Carlos, and Anaïs— talked about language as separate systems that should be left as such. Junior High teacher Sophie, for example, discussed the hard line she drew around combining languages this way:

> The [mistakes] that I correct like right away off the bat is anybody is if they mix the languages. I'll be like "well we're talking French now. Can you try it in French? Do you know how to say that in French?" Or "we're talking in Spanish now." (Interview, June 19, 2015)

Like Spanish teacher Carlos, who described his stance on mixing English and Spanish as similarly "strict," Sophie demonstrated here how languages at TWFS were largely corralled into separate systems, in line with a modernist approach to language.

Moreover, as seen in the above quote from Sophie, maintaining the monolingual nature of the interactions was important for teachers. This was done in several ways. First, teachers brought in a range of resources to support separate language use. For example, though she spoke all the languages of the school, Sophie did not resort to these resources with students:

> I won't use the word in English. I will mime, I will draw, I will talk about it, I will you know I'll do whatever to convey the meaning but I will maintain in that moment whatever language I'm speaking. Um so as not to undermine. (Interview, June 19, 2015)

Similarly, the French teacher, Anaïs—who spoke English and understood Spanish—discussed her use of non-linguistic resources to keep conversations with young learners who begin to mix their language resources or revert to English:

> Or I try to see if—I am very gestural. I use non-verbal language a lot. And maybe I ask someone else a mediator another student. Or another adult. To come help us. (Interview, May 29, 2015)

Similarly to other teachers at TWFS, Anaïs pointed here to a use of a range of resources including gesture and other interlocutors to maintain the linguistic purity of an interaction. In contrast to the emphasis on combining and orchestrating a range of resources within a postmodern language frame, this kind of resourcefulness worked to uphold a largely modernist understanding of language in which languages are separate (Blommaert, 2010; García, 2009; Weber & Horner, 2012).

In addition and in contrast to what we will see with student language play, teacher language play worked to reinforce language boundaries and borders—as well as a modernist understanding of language. For example, during the group interview, Upper Elementary school teacher Ella brought up the theatrical play that Carlos had written for the students to perform; in it, students acted out the common grammatical mistakes made by learners of the language in an engaging and comical fashion. Similarly, Anaïs discussed how she played with the *faux amis* or

[17] Ella, the Upper Elementary school English teacher, did not discuss language in a way that strongly indexed an ontological discourse.

false cognates between French and English when talking with students: if a student incorrectly substituted the English word "box," Anaïs would play along, interpreting the French meaning (boxing, as in the sport) and putting up her fists for a mock match. For Anaïs, this was "to show them 'oh ok, I don't have to use that word [in French]'" (Interview, May 29, 2015). What we see here, then, is a use of language play—the creative use and modification of language in conversation—to support a standardized and pure view of the languages being taught in line with a modernist language discourse.

Embodied language discourses. Observations of the other teachers at TWFS nuanced yet confirmed the articulated emphasis on keeping the different languages at TWFS separate. For example, Carlos, on the one hand, did maintain a strict separation between Spanish and English in the advanced combined Junior High and Upper Elementary Spanish class, using a point system to mark how many times students used English words; reaching a certain number of points would mean extra work—a poem or a book report in Spanish—for the offender. This system aligned with a more modernist view of language in which language needed to remain pure.

On the other hand, Carlos' interactions with students did not always adhere to the strict guidelines on language mixing or correcting that the teachers had laid out. Rather than an across-the-board rule, the way in which Carlos corrected students as well as whether or not he corrected a student at all was related to both a student's' proficiency level in Spanish as well as to the context. For example, when talking with Isaiah, who was in advanced Spanish and who had been learning the language for many years, Carlos had high expectations, as evidenced in the following interaction during a work period:

1 Isaiah: *Ok aquí es todo el rechercho.*
[Ok here is all the *rechercho*.]
2 Carlos: *Es todo (2.0) el que?*
[It's all (2.0) the what?]
3 Isaiah: *Um los cartas indexas.*
[Um the *cartas indexas.]*
4 Carlos: (5.0) *El información que tienen?*
[(5.0) The information that you have?]

(A few minutes pass as Isaiah and Tyrell, his partner, discuss what they have to show Carlos)

5 Isaiah: *Tengo algo=*
[I have=]
6 Carlos: *=Mira. No "tengo" (2.0) tu?*
[=Look. Not "I have." (2.0). You?]
7 Isaiah: *No (1.5) tiene. Si no tiene.*
[No (1.5) he doesn't have. Yeah he doesn't have.]
8 Carlos: *Ahorita no tiene.*
[Now he doesn't have.]
9 Isaiah: *No. Tuve.*
[No. I had.]
10 Carlos: *Eso es yo.*
[That's "me."]
11 Isaiah. *Oh. Tuvo.*
[Oh. He had.]
12 Carlos: *Perfecto.*

[Perfect.]
(Audio recording, May 12, 2015)

In the same conversation, Carlos corrected Isaiah's Spanish in two ways. In the first segment (lines 1-5), Carlos did not accept Isaiah's Spanglish ("*el rechercho*" in line 1 and "*los cartas indexas*" in line 3); while they were likely comprehensible to Carlos, who spoke English, he chose to signal them as not understandable. In the second segment (lines 5-12), a minute later, we see that Carlos did not accept a mis-conjugated verb, instead leading Isaiah to the correct verb conjugation for the third person singular past tense of *tener*, strictly in Spanish.

These high standards for Isaiah's Spanish production were in contrast with expectations of Clara: having entered the school later than most students, Clara had had less Spanish instruction and was at a lower proficiency level than Isaiah, even though they were in the same Spanish class. In a conversation before the start of that class, Clara pointed out the location of an electrical outlet to Carlos, who was searching for one in the Junior High classroom: "Carlos, *il y un* outlet *aquí*," she said, motioning to the spot on the wall. Carlos responded, not with a reprimand of the language mixing (English: "outlet," French: "*il y a*", and Spanish: "*aquí*") but with "*Ah gracias*," indicating his focus on her meaning over form. The interactions with students in the advanced Spanish class points to how Carlos mediated his separate language stance based on student proficiency level (Audio recording and field notes, April 28, 2015).

In addition, Carlos showed a similar level of nuance when it came to correction depending on the context. In cooking as well as in science classes, for example, Carlos did less explicit correction, taking student responses more often for their meaning than for their adherence to a specific linguistic system. For example, during a math lesson with Alan, Carlos paid more attention to learning the math content than to correct Spanish usage:

1 Carlos: *Estos en ingles tienen mucho parecido. Lo usan para hacer division. Como se*
2 *llaman?*
[In English these have many different names. They are used to do division. What do you call them?]
3 Alan: *El personas* [sic].
[The persons [sic].]
4 Carlos: *Bien las personas.*
[Good the people.]
(Audio recording, May 6, 2015)

Alan's utterance, "*el personas*" (line 3), was off in terms of gender and article to the correct "*las personas*" that Carlos supplied in the following line. Despite this error, Carlos attended to the meaning behind Alan's utterance over the grammatical alignment of that utterance—namely, correct gender and article—to standard Spanish.

Similarly, during a cooking lesson, Carlos attended to the task at hand, making a meal for the other students, over perfect Spanish:

> Carlos spoke to the students entirely in Spanish, prompting them to take on different tasks (measuring spices, making the bread, cleaning up different parts). For the most part, students spoke to each other while cooking in English. One student came to ask Carlos about the snack and asked in English. He repeated what she said in Spanish (with a raised intonation) and then answered her. At one point, Carlos asked a question about the status of the meal as a whole and timing of lunch; although I couldn't full hear from my position, it seemed that he was wondering

> if the lemon curd portion was a part of the meal itself or dessert. A student, very passionately, responded: "*Eso es* [This is] dessert! It's lemon curd!" Carlos continued along then, framing the lemon curd as "*postre*." There was not an explicit correction of the word "dessert" here (Field note, March 3, 2015).

These two scenarios indicate that Carlos' articulated view of language as pure and separate systems did not always translate into a strict correction profile; rather, in choosing to attend to meaning over correctness or language purity, Carlos demonstrated a finely-tuned ability to take into account both student and contextual factors in interacting with and correcting his students. This was the case for Anaïs and Sophie as well: while teachers articulated strict barriers between languages at the school that aligned with a modernist language discourse, their actions in the classroom were more nuanced, expertly taking into account a range of factors in whether or not to maintain the standardization or purity of the linguistic systems that their student were learning.

There are several ways to look at this overall modernist orientation to language. First, understanding linguistic systems as separate has certainly been a common approach in traditional language learning models, including the immersion model employed at TWFS; indeed, the modernist orientation to language has been the hallmark of the foreign language profession for decades if not centuries (Kramsch, 2014). The modernist language discourse reproduced at the school, then, has deep roots in a larger professional discourse, a discourse that is threatened by the language mixing and code-switching characteristic of postmodernist language discourses. As such, resistance to mixing languages is understandable.

Moreover, it is worth wondering if and how anything less than a strict separation of languages could work with TWFS's target demographic: largely elective bilingual secondary students who may not all be motivated to learn the new language. Assuming anything less than a strict separation between the languages could have quickly resulted in students reverting to their first or dominant language at the expense of learning the new languages. Carlos expressed this directly:

> 1 You know something tells me that [allowing students to mix languages] would be ok with
> 2 French and Spanish. But I don't know English and Spanish. Yeah something tells me
> 3 (2.0) those are the two languages that that we have to push a lot and it's a constant you
> 4 know fight of [sic] have a child just come to you and have a conversation just in the
> 5 language. (Interview, May 27, 2015)

Carlos noted here the "push" as well as the "fight" (line 3, 4) to get students to speak in Spanish and French when English was their default; allowing students to mix English and Spanish or English and French, then, threatened the immersion environment that the school worked hard to cultivate. Interestingly, Carlos did not see a problem with mixing Spanish and French (lines 1-2); crossing the boundaries between these two languages was not perceived as a threat, arguably given that the struggle with students was against the dominance of English at the expense of other languages. In this case, then, the reproduction of modernist language discourses by teachers was also rooted in desires to foster learning non-English languages and to fulfill the different roles that language could play in a student's life.

Although expressed less explicitly than was the case with Lisa, we might also read a globalization and fear of globalization discourse within TWFS teachers' understandings of what language was. First, as we just saw, maintaining separation between languages via a modernist language discourse was seen by TWFS teachers as the only way to cultivate non-English

language learning; given that language learning itself was found to be potentially rooted in anxiety in the face of globalization, we could subsequently say that the modernist discourse taken on by teachers could also have been rooted in this same anxiety. Second, the mixing of languages characteristic of a larger globalized world threatened traditional understandings of language and the language teaching profession.

Students. In contrast to teachers and administrators, students demonstrated a different orientation to language, mixing their linguistic resources and playing with the sounds, grammars, and physical forms of language to make meaning.

Mixing. Students at TWFS mixed the linguistic resources at their disposal in a range of ways. For example, they often turned to another language when they were unsure of a word or verb in the target language. For example, Cole and Andy, who sat side by side on the floor during an open work period, worked through the correct word for "boat" in French. Andy, who was working on a book report on his computer, turned to Cole for assistance in finding the right word:

Andy: Cole, are you good at French?
Cole: Sort of.
(Cole leans over to look at Andy's screen. Andy had written "*un* boat" in his French book report, to which Anaïs had attached a track-changes comment indicating that it needed to be changed. Cole points at the phrase.)
Cole: *Un* boat?
(The two of them laugh. Andy deletes "boat" and types "*barco*.")
Cole: It's not *un barco*. That's in Spanish. Yeah. (Reading the text on the screen) "*Il* felt" (The two laugh.) *Le monstre a bougé le bateau*. [The monster moved the boat]. That's what it is.
(Audio recording and field note, June 3, 2015)

First, we see here how Andy had initially drawn on English to complete a sentence otherwise written in French with "un boat." Next, while sitting with Cole, he drew on Spanish, selecting the Spanish word for boat, *barco* (line 7). At the end of the excerpt (lines 8-9), and with Cole's help, Andy was able to identify the correct work for "boat," after having tried his additional semiotic systems in the pursuit of the French word.

Similarly to Andy, who turned to both English and Spanish in looking for the French *bateau,* Channing reverted to English when talking with Carlos during a cooking lesson:

> Struggling to put saran wrap over the bowl of dough, Channing exclaimed in frustration to Carlos who came to investigate: "*esto no* [This one doesn't] (2.5) sticks." Carlos bent to work on the task himself, as Channing continued "*no puedo* [I can't] (1.5) it's tight." Carlos continued on, saying it was ok and that it didn't need to be perfect (Field note, March 11, 2015).

As evidenced by Channing, Andy, and Cole, students at TWFS turned to other linguistic systems when they came across an unknown word or phrase in the target language. This kind of reaction is often positioned in a deficit frame: students have a gap in one linguistic system so they substitute in another to fill that gap. Rather than looking at this from a deficit perspective, though, this practice can also be seen as a resourceful, agentive one: rather than halting their utterances, rather than explicitly asking a more expert peer or speaker for the exact translation, students turn to other linguistic systems at their disposal in an attempt to get their meaning across. Admittedly, the speaker's resources are the not only part of this equation; rather, the

speaker must also be aware of the context and their interlocutors as well, of whether or not the resources they deploy are being understood. At TWFS, where the teachers and students often shared languages in common, student attempts to use linguistic resources from different language systems were likely a good bet.

Students at TWFS also demonstrated fluidity between languages even when they were not "missing" a particular word or phrase. For example, during a math lesson on multiplying exponents, Anaïs posed a question to Sara, Meagan, and Daniel:

1 Anaïs: *Qu'est-ce que la base, qu'est-ce que l'exposant ici?*
[What's the base, what's the exponent here?]
2 Sara: *La base aquí* (1.5) *et le exposant*. Wait wait sorry [to Anaïs]
La base [the base, French] *aquí* [here, Spanish] (1.5) *et le exposant* [sic] [the exponant, French]. Wait wait sorry [to Anaïs].
3 Meagan: What? Why *six* [French pronunciation]?
4 Sara: The question is to find out what the *puissance* [power, French] is.
(Audio recording, May 7, 2015)

Here, Sara and Meagan freely and liberally mixed the different languages that they spoke: Sara combined Spanish, French, and English (line 2) and then English and French (line 4) without pause and Meagan followed suit, seamlessly deploying the French *six* after the English interrogative. We can see that students at TWFS mixed language in a fluid manner, not always giving an indication that some resources belonged to one system while others belonged to another; rather, they at times demonstrated a fluid deployment of linguistic resources to make meaning, without regard for the traditional barriers attributed to language.

These excerpts and the language mixing that they demonstrate resemble a postmodernist language discourse, where systems are not seen in isolation from one another but a united pool of semiotic resources, deployed to get a particular message across. Moreover, these examples showcase that students were not afraid of mixing languages: the stigma against combining languages at the heart of modernist discourse did not impact students in the same way that it impacted adults: students were not afraid of blurring the lines built around languages; rather, they mixed them with abandon toward larger goals of making themselves understood.

Play. Students at TWFS also played with language in a variety of ways, including playing with the way in which the different languages sounded. One example took place during the same math lesson with Anaïs on multiplying exponents cited above. Mid-lesson, Anaïs presented Sara and Daniel with a challenging problem:

1 Daniel: This is gonna be tricky. [high pitched and sing-songy voice] Tricky tricky
2 Anaïs: *Donc je commence par la petite catégorie. La petite catégorie de*
3 *multiplicateur.*
[So I start with the smallest category. The multiplier.]
4 Daniel: ///[Singing] Tricky tricky *catégorie* tricky tricky *catégorie*///
5 Anaïs: *Le multiplicateur*. [The multiplier]/// Daniel: *Quatre*! [Four!]/// *Donc allons-y.*
6 *Donc je fais quatre* [So here we go. I take four] ///Daniel: [singing] tricky tricky
7 *catégorie* tricky tricky *catégorie.* (Audio recording, May 7, 2015)

Daniel began in line 1 by creating a song around the word "tricky," overlaying Anaïs explanation. Drawn to the matching hard /k/ sound in the French word "*catégorie*," which Anaïs used in line 2, Daniel continued and expanded his song in line 4. In other words, Daniel played

with the sonic similarities in French and English and built a little song around them, demonstrating a playful, irreverent use of the linguistic systems that he was learning.

In addition to playing with the sounds of language, students also played with language forms, both grammatical and physical. For example, Andy and Cole, sitting on the floor during that same open work period referenced above, discussed how to spell the French preposition *à côté* [next to]:

Cole: No I'll spell it. It's like this [says it as he types it]. But there's like some weird you know this symbol thing on top of "o".
Andy: It's the "e"
Cole: No it's the "o".
Andy: Is it that one?
Cole: Yeah.
Andy: It looks like a house.
Cole: That one looks like a giant party hat.
Andy: It looks like it's wearing a cone. Cuz it doesn't have like a little string or something.
(Audio recording and field note, June 3, 2015)

Once they decided how to spell the prepositional phrase, Andy and Cole engaged in a discussion of what the physical shape of the circumflex accent in French resembled in lines 7-10: a house? A giant party hat? A cone? This discussion indexed a more creative, imagined world of language's forms, the physical shapes of which mapped onto items outside the reach of the linguistic system itself. Moreover, this discussion points to how students dissected the graphic representation of language, making out of its components a new set of semiotic resources with which to make meaning.

In addition to the physical forms of language, the students also engaged with grammatical forms in playful ways. Teachers, for example, noted students' playful—and perceptive—attempts to locate a word they didn't know a word in Spanish or French:

Carlos: Sometimes they like to play when they don't know a word. They try to act—in Spanish it's "-o." I dunno in French if they try that. For everything, it's "o" and they think it's funny cuz well they think that it's like this.
Ella: It's *exacto*.
Sophie: *Boco*. [group laughs].
Carlos: And *el rako*. [group laughs]
(Group interview, March 19, 2015)

In line with teacher observations, students did indeed employ this strategy often. For example, in a science lesson on endo- and exothermic reactions, Carlos gestured to a bottle of white power as he explained the experiment to the students:

Carlos: *Lo primer, esto como se dice en español?*
[First, what's this called in Spanish?]
Silvia: Yeast.
James: Yeast-o. yeast-a.
Carlos: *Yeast-o? Es una palabra que no exista.*
[Yeast-o? That's a word that doesn't exist.]
James: Yeast-e Yeast-y

6 Carlos: *Levadura.*
[Yeast.]
7 Students (in unison): *Levadura*.
(Audio recording and field note, April 3, 2015)

Before Carlos stepped in, James valiantly tried to supply the right word for yeast, adding on a slew of possible endings to the English word, beginning with -o in lines 3 and 5.

This kind of grammatical substitution also took place in French. For example, while dissecting a squid in a science class with Anaïs, Sheila offered Louis some support in his attempt to ask Anaïs a question:

1 Louis: [to Anaïs] *Est-ce que je peux* cut *ça* out? Cut *ça* out?
Est-ce que je peux [Can I] cut *ça* [that] out? Cut *ça* [that] out?
2 Sheila: Intestine? [English word but with a French accent] (laughs)
3 Anaïs: *Intestin* [Intestine].
(Audio recording and field note, May 8, 2015)

As we can see with Sheila and with James, in applying known endings or inversions to English words, as Sheila does in line 2 above, students expressed not only an advanced knowledge of the linguistic systems that they were learning but also a tendency to subvert and play with those systems through this advanced knowledge. This points to a certain levity in the face of the traditional, standardized, and seemingly immutable linguistic systems that they are being taught: rather than always respecting the rules, forms, and sounds of these standardized systems, students took all the resources offered into their own hands, making light of the weighty rules and regulations as well as making new forms of meaning. As was the case with student language mixing, this points to a more flexible, fluid and ultimately fearless understanding of language (Blackledge & Creese, 2010; García, 2009).

Summary. Returning to the first two research questions, we see additional language discourses used to position second/foreign language at TWFS in different ways across groups. Both modernist and postmodernist discourses were reproduced by TWFS school actors, although there were distinct differences across groups: TWFS students' language use in the classroom demonstrated an understanding and positioning of language that contrasted with teachers' and administrators' understandings: rather than adhering to the traditional boundaries of languages in keeping with a modernist language discourse, as teachers and administrators did, students largely approached language as a fluid set of resources to be used creatively to make meaning in line with postmodernist discourses. Moreover, students were not burdened by the concerns held by adults in the face of language mixing: students displayed no sign that mixing languages stood as the threat that adults perceived and felt free to use language in a more fluid manner. More specifically, students were not burdened by the historical weight of the language learning profession nor the perception that mixing would slow down their learning process. In addition and importantly, students did not fear the mixing and hybridity spurred by globalization and represented in a postmodernist language approach; rather, they looked at the languages that they were learning—and, perhaps by extension globalization itself—as an expanded set of semiotic resources, ripe with possibility and potential for making meaning. As was the case with discourses of language's role seen above, then, students demonstrated a non-linear reproduction of higher organizational discourses in keeping with an ecological approach (Kramsch, 2002; Larsen-Freeman, 2002).

Similar to the first question over language, there was a struggle over what language was at TWFS between teachers and administrators, on the one hand, and students on the other. As we saw, students at TWFS used the different languages that they were learning in ways that did not always match the more modernist aspirations of the school. This boils down to an age-old struggle of language teachers: getting students to speak second/foreign language in ways that the school deemed appropriate.

I turn now to a discussion of the implications of this and previous struggles over second/foreign language as well as the different positioinings of second/foreign language at TWFS—for the school, for learners, and for understandings of global education.

Summary & Implications

Summary of how second/foreign language was positioned across groups. For both the role and nature of language, TWFS school actors positioned second/foreign language through many discourses. In terms of language's role, students reproduced mostly a market-based language discourse, with occasional nods to additional discourses (e.g., communication, travel, and family). Administrators, teachers, and parents shared a positioning of language in terms of cultural understanding and awareness, yet also differed: administrator and teachers reproduced a cognitive development language discourse while parents did not. Moreover, utilitarian and neoliberal language discourses, sparsely reproduced by teachers and administrators, were reproduced more prominently by parents. In terms of language and its nature, students and adults also differed in terms of the nature of language: students used language in a way that aligned with a postmodern discourse while teachers and administrators aligned with a modernist discourse.

For both language's role and its nature, a globalization as well as fear of globalization discourse were also salient in TWFS adult understandings of language. The undercurrent of anxiety was not explicit; rather, it was revealed within the interstices of participants' other discourses, woven into the different ways in which language was positioned. This anxiety centered on the increased connection with the world due to porous national borders as well as digital connectivity; of increased competition on now global educational and job markets; and of shifting individual, professional, and national identities.

It is also worth pausing to consider what school actors at TWFS did not say, the discourses that they did not reproduce in positioning second/foreign language. For example, it is striking that none of the adult participants explicitly mentioned the role of English as a lingua franca around the world or the possibility that English could be used to fulfill the different roles of language cited—for example, supporting business endeavors or fostering cross-cultural understanding. This contradicts the continued value of English deduced from parent actions: English, along with math, was revealed to be a priority subject, more highly valued than the second/foreign languages that their students were learning; moreover, it contradicts established dominance of English as an International Language in many arenas of global life (McKay, 2012).

In addition to not positioning language with reference to English as an International Language, positioning second/foreign language in terms of national security and defense, a prominent discourse among governmental and policy documents (Klein & Rice, 2012) was not done at TWFS. As was the case with the survey, this could suggest that the higher organizational levels that do position language via this discourse (e.g., national government) did not hold influence or sway on TWFS school actors; this illustrates an example of ecological theory's non-linear influential nature—the discourses of higher organizational levels were not automatically or

fully reproduced by lower organizational levels. Conversely, the absence of this discourse could also suggest a more individualistic orientation to second/foreign language more generally, rather than a national one, in line with neoliberalism and the neoliberal threads seen above.

Another unvoiced discourse to consider: while some references were made here and there to the use of language in local or national contexts, the primary thrust of discussions of language at TWFS was in relation to extra-national communities. This aligned with the private, elite schools from the survey: Midwest International, Aurelius International, and Trinity Preparatory. In a similar vein, while increasing interconnection on a global scale was frequently referenced in interviews, the history of interconnection, mixing, and diversity in the United States, an immigrant and multilingual nation, was not referenced. This would further suggest that the imagined context of globalization was outward-facing and that the increased connection imagined was international in nature.

Finally, similar to the survey and excepting Rosa (Assistant Head of School), TWFS school actors did not explicitly position second/foreign language in terms of pressing global issues, such as combatting increased social inequality and poverty, climate change, and forced mass migrations from war and conflict. While this is not to say that these issues were not salient to all TWFS school actors, it does point to the fact that second/foreign language was largely not positioned as a way of addressing these issues.

Implications for global education and for learners. Returning to the final research question, I turn now to a more pointed discussion of what these multiple discourses—articulated, embodied, and unvoiced—mean for understandings of global education and the resulting impact on learners. As we saw, there were multiple discourses both of the role of language and of what language was reproduced by participants at TWFS. On one level of analysis, this might suggest that these different discourses competed amongst each other for which would ultimately drive how language was positioned at the school and how global education was understood at TWFS. Indeed, the analysis of TWFS revealed the struggles over how language was positioned between parents and teachers/administrators (over the role and importance of language) as well as between administrators/teachers and students (over what language was). This would also suggest, then, a similar set of struggles over global education across school groups. In terms of the role of language, for example, administrator and teachers advocated a view of global education focused primarily on cultural understanding and awareness in which second/foreign languages were central; conversely, parents positioned language in a more utilitarian or neoliberal understanding of global education. In terms of the nature of language, teachers and administrators' focus on modernist understandings of language would suggest an understanding of global education rooted in nation states that may not align with the more diverse, multilingual, and mobile reality under globalization; conversely, students' use of language, if nurtured within a postmodern language frame, could build understandings of global education focused on crossing the different borders—linguistic, cultural, and national—characteristic of our global world.

On a second level of analysis, however, if we move forward with the analytical trend of fear of globalization seen throughout the data and the chapter, we might not read these discourses as being in strict competition: the common rooting of several of these discourses in larger concerns or fears of the globalized world might suggest that fear of globalization could be central drivers of how second/foreign languages were positioned at TWFS for adults: preparing students to interact with non-local others (cultural understanding/awareness discourse), to think flexibly and critically (cognitive development discourse), and to gain a competitive edge on the global

job market (economic opportunity or neoliberal discourse) could have all stemmed, in part, from fear of globalization.

This finding that beneath many discourses of language could have been a central discourse of anxiety or fear has implications for our understandings of ecological theory as well as for understandings of global education at TWFS. In terms of ecological theory and as mentioned throughout, the multiplicity and complexity of language discourses found at the school is consistent with an ecological understanding of social reality: human beings reproduce a range of different discourses in complex ways, representing non-linear influence from higher organizational levels, from additional centers of authority, as well as from past, present, and anticipated future discourses (Blommaert, 2010; Kramsch, 2002; Larsen-Freeman, 2013). That said, this finding highlights an important nuance in this complex portrait: beneath multiplicity can be similarity, manifested in different forms. In this case, that similarity was fear in the face of globalization.

In terms of the resulting understandings of education at TWFS, this finding suggests the potential that global educational offerings could be rooted in the same fear, educating students across the board in reaction to concern in the face of globalization and its effects. Moreover, given that second/foreign languages were most often positioned in reference to international communities, the resulting understanding of global education would be about fears oriented outside the country, neglecting the manifestations of globalization on national and local scales.

To be clear, fear in the face of globalization and its effects would be quite natural and perhaps even unsurprising. What was surprising, however, was the way in which this fear was—or perhaps was not—directed at TWFS. Analysis of the positioning of second/foreign language at TWSF suggests that while learning additional languages may have been rooted in fear of globalization, the object of that fear was largely ambiguous or misdirected: the fear tended to be more amorphous allusions to change and instability or linked to individual competition on global job markets. In other words, second/foreign language was not explicitly positioned as a way to specifically address pressing and legitimately fear-inducing global issues—everything from the need to negotiate trans-national regulations on carbon emissions to the need to better communicate with multilingual immigrant communities at home and abroad toward equity and understanding.

With all that said, these positionings of language and the resulting understandings of global education did and did not impact learners. On the one hand, as we saw with the importance and value of language, TWFS students were likely influenced by teacher as well as parental discourses. This aligns with the influence exerted by higher organizational level discourses on lower organizational level discourses theorized in ecological approaches to discourse: students, at a lower level of organization, were influenced by and reproduced to different degrees the discourses of higher levels of organization—their teachers and parents (Kramsch, 2002; Larsen-Freeman, 2013).

On the other hand, TWFS students remained relatively fearless when it came to language: while they reproduced market-based understandings of language and its role in education as well as society, they did not indicate that this discourse came from fear. Similarly, their postmodern use of language was free of the borders and barriers put around language by teachers and administrators. This would suggest that while students were indeed influenced by the discourses produced by their parents and teachers, this appropriation and reproduction was not linear; rather, students found additional centers of authority and came to see language in ways that contrasted with parents and teachers (Blommaert, 2010). In other words, the fear potentially

undergirding adult perceptions of language seemed to not have penetrated students views of language and, perhaps, the changing world more broadly.

While illuminating, this chronicle of how second/foreign language was positioned through discourse at TWFS as well as at survey schools is only one side of the story. I turn now to Part III and a discussion of the other component so often placed at the heart of global education, digital technology, to better sketch out the understandings of global education found in US schools today.

CHAPTER 5: SURVEY FINDINGS—DIGITAL TECHNOLOGY IN US GLOBAL SCHOOLS

Introduction

This chapter mirrors Chapter 3, reporting on digital technology results from the survey component of the study. As discussed in Chapter 2 and reviewed in Chapter 3, the survey set out 1) to identify how a larger spread of global schools and global school actors positioned these two components within global education through an analysis of the most prominent discourses of second/foreign language and of digital technology reproduced and, as a result, 2) to contextualize the positioning of second/foreign language and of digital technology identified at the focal school.

With a complete overview of the survey instrument available in Chapter 2, I summarize important details here. First, a total of six schools participated in the survey: the focal school (The World First School) and five additional schools. Second, the analysis presented in this chapter focuses on perceptions of digital technology for teachers, parents, and students; due to a small number of responses that were often incomplete, I did not analyze administrator/staff or the focal school discourses in terms of differences across groups or schools, although these responses are included in the overall analysis. Third, some schools did not distribute the survey to all the targeted participants (e.g., Trinity Preparatory did not distribute the survey to parents) and, consequently, these populations are not included in the analyses presented below. Finally, data from closed-ended questions were analyzed using descriptive statistics while data from open-ended questions were analyzed using a combination of iterative rounds of inductive and deductive coding (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009) and critical discourse analysis (Blommaert, 2005; Fairclough, 2001).

This chapter is organized around two sets of questions: 1) How important is digital technology in education and why? And 2) Which digital technologies are important and why? For each, I first discuss the general trends in respondents' answers through descriptive statistics. I then highlight the prominent discourses of digital technology reproduced by participants that contextualize these trends and that shed light on how digital technology was positioned within global education. I also highlight variation across school groups (parents, teachers, and students) and schools as well as link the discourses that arose in the survey data to the discourses discussed in Chapter 1. I conclude with a summary of the issues raised in the survey and that will be investigated in Chapter 6.

How Important is Digital Technology and Why?

Parallel to the questions on second/foreign language, the first question, represented in Figure 5.1, asked respondents to assess the importance of learning digital technology in education today on a Likert scale of Not Important (1) to Very Important (5).

Figure 5.1. Survey Question: Assessing the Importance of Digital Technology in Education Today

How important is learning about digital technology in education today?[18]

- ❍ Not important (1)
- ❍ (2)
- ❍ (3)
- ❍ (4)
- ❍ Very Important (5)

Figure 5.1. The first question that survey participants encountered on digital technology through the online platform Qualtrics.

Similar to their assessments of language's importance, global school actors who participated in the survey perceived digital technology as important in education today: 84% (n=422) of respondents selected digital technology as Important or Very Important (4 or 5, respectively) while only 2% (n=12) selected language as Not Important or Not Very Important (1 or 2, respectively) (see Table 5.1 and Figure 5.2). This suggests that, on the whole, participants positioned digital technology as centrally important to a global education; this also further solidifies the rationale that examining how digital technology and second/foreign language are positioned via discourse can help illuminate understandings of global education.

Table 5.1

Perceived Importance of Digital Technology by School Group

School Group	1 Not Important	2 Not Very Important	3 Neutral	4 Important	5 Very Important
Teachers (n=42)	0%	0%	17%	17%	67%
Parents (n=100)	2%	3%	7%	13%	75%
Administrators (n=9)	0%	0%	11%	11%	78%
Staff (n=4)	0%	0%	0%	25%	75%
Students (n=350)	1%	1%	16%	34%	48%
Total (N=505)	**1%**	**1%**	**14%**	**28%**	**56%**

[18] Study instruments, including survey questions, did not ask participants to articulate their understanding of second/foreign language and digital technology "in global education" but rather "in education today." This was due to the wide-ranging and often ambiguous understandings of what "global education" means found in pilot studies. Given the operationalized definition of global education used in the study and given that all schools in the study met that definition, I make the interpretive connection between "global education" and "education" in analyses. For more details on this within the study design, see Chapter 2. For a discussion of the limitations of this design as well as next steps, see Chapter 7.

Figure 5.2. Perceived Importance of Digital Technology, All Respondents

Survey question: "How important is learning about digital technology in education today?"

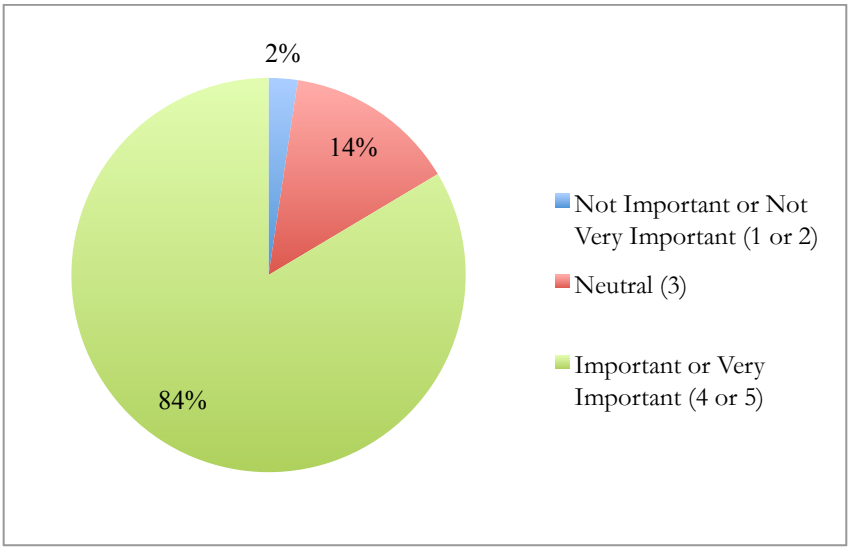


Figure 5.2. Pie chart representing all survey respondents' perceived importance of digital technology in education today. N=505. The full breakdown (percentages and participants) is as follows: Not Important/1 (1%, n= 7); Not Very Important/2 (1%, n=5); Neutral/3 (14%, n=71); Important/4 (28%, n=141); Very Important/5 (56%, n=281). Data have been rounded to whole numbers to improve readability.

Within this overall portrait of technology's perceived importance, there were some distinct differences across groups (parents, teachers, and students) (see Figure 5.3). As was the case with second/foreign language, students were much more mixed in their understanding of digital technology's importance: 48% of students (n= 168) selected digital technology as Very Important (5) versus 75% of parents (n= 75) and 67% of teachers (n=28). This suggests that students as a whole were less convinced of technology's importance and role in global education, likely in line with their developing worldviews.

In contrast to second/foreign language, there was more of a distribution amongst teachers in their assessments of digital technology's importance: while no teachers deemed digital technology to be Not Very Important or Not Important (2 or 1), teachers were divided: 17% (n=7) selected technology as Neutral (3) and 17% (n=7) selected technology as Important (4); that left 67% (n=28) selecting technology as Very Important (5). This contrasts with second/foreign languages, where 81% of teachers selected language as Very Important (n=35), and suggests that teachers as a group were also less sure of technology's importance in education.

Parents, conversely, seemed to be more certain of technology's importance in education across the board, selecting it as most important among the different groups surveyed: 75% perceived technology to Very Important (n=75) and 13% perceived it as Important (n=13). These differences across teachers, parents, and students point to the potential for tension around the perceived importance and role of digital technology within global education as well as the resulting understandings of global education across groups.

Figure 5.3. Perceived Importance of Digital Technology: Teachers, Parents & Students

Survey question: "How important is learning about digital technology in education today?"

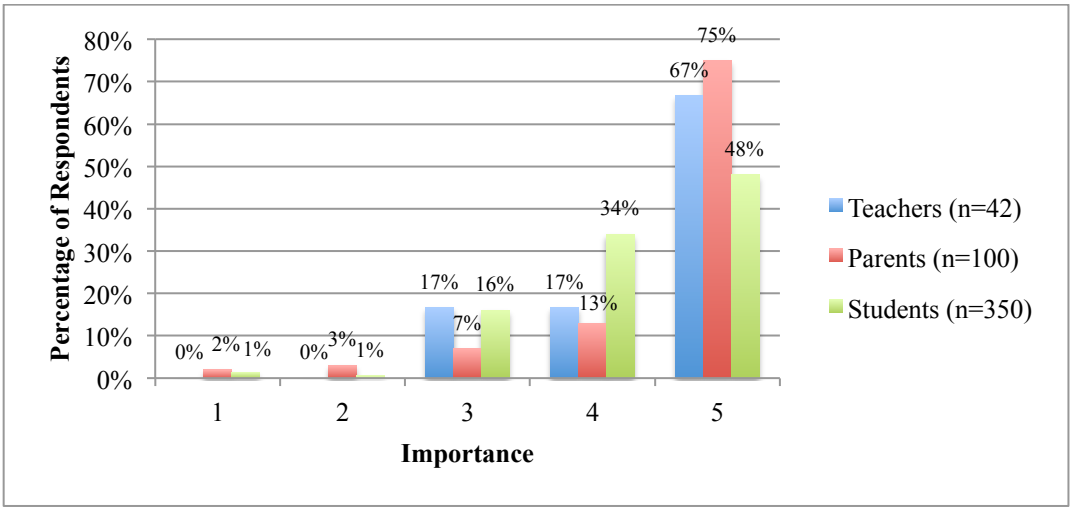


Figure 5.3. Bar graph representing teacher, parent, and students' perceived importance of digital technology in education today. N=505. Due to small sample size, administrators and staff were not included. Data have been rounded to whole numbers to improve readability. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

When looking at the schools individually, there was some confirmation of average trends as well as some variance. For example, at all three schools with parent respondents, parents consistently perceived technology to be Very Important (5), more than teachers and students (see Figure 5.4). All in all, then, there was little variation in parent perceptions of technology's importance across schools.

Figure 5.4. Perceived Importance of Digital Technology by School: Parents

Survey question: "How important is learning about digital technology in education today?"

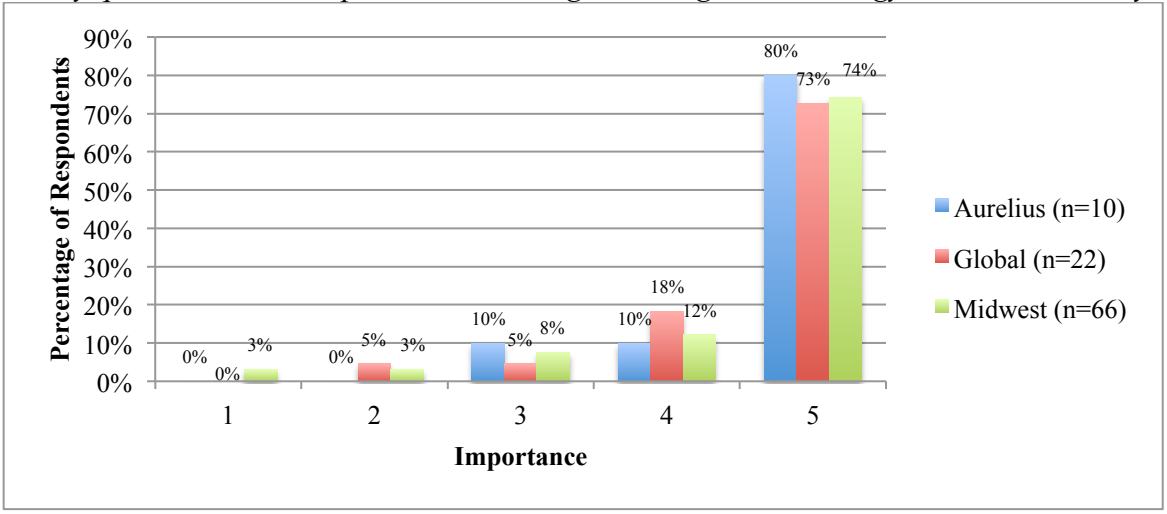


Figure 5.4. Bar graph representing parents' perceived importance of digital technology in education today across schools. N=100. Data have been rounded to whole numbers to improve readability. Focal school parents are not included in the analysis due to small number of respondents (n=2). International Charter and Trinity Preparatory are not included as parents from these schools did not participate in the survey. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

There was, however, variation across schools in student responses (see Figure 5.5). Students at Midwest International, for example, perceived technology to be less important as compared to other schools and to the average trends: only 31% of students at Midwest International (n=8) selected technology as Very Important (5), compared with 43% (n=18), 51% (n=138), and 67% (n=4) at Aurelius International, Global Studies Prep, and Trinity Preparatory, respectively. Conversely, students at Trinity Preparatory very strongly positioned technology as important compared to other schools and the average trend: 67% (n=4) selected it as Very Important (5) and 33% (n=2) selected it as Important (4). While the small sample size of Trinity students tempers this finding, this may nevertheless suggest that there were school-based differences in student understandings of digital technology's importance and, as a result, of global education.

Figure 5.5. Perceived Importance of Digital Technology by School: Students

Survey question: "How important is learning about digital technology in education today?"

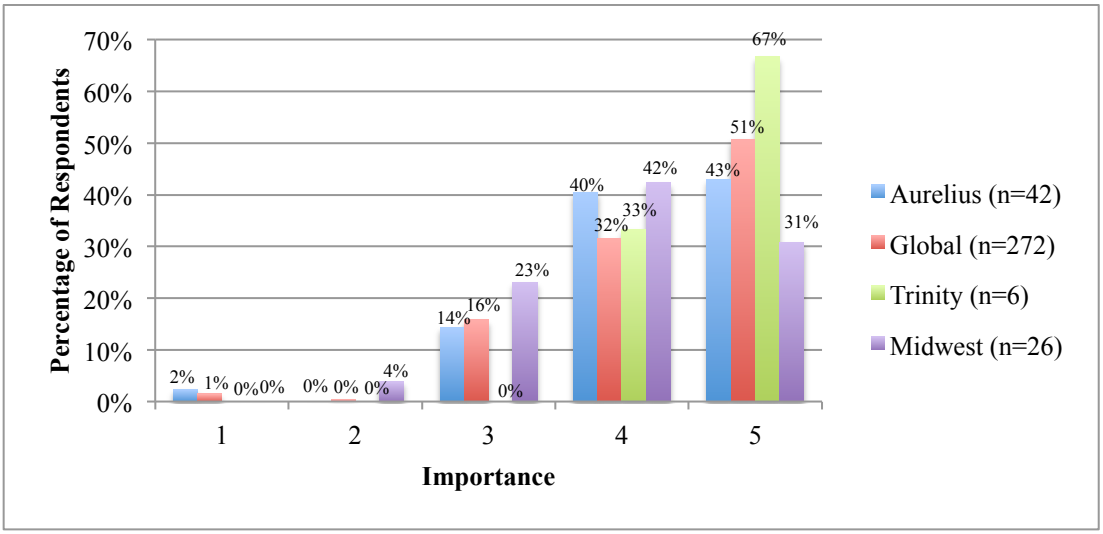


Figure 5.5 Bar graph representing students' perceived importance of digital technology in education today across schools. N=350. Data have been rounded to whole numbers to improve readability. Focal school students are not included due to small number of responses (n=4). International Charter is not included as their students did not participate in the survey. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

There was also some variation in teacher perceptions across schools, as illustrated in Figure 5.6. Teachers at Trinity Preparatory and at Midwest International perceived technology to be less important than teachers at other schools, proportionally selecting Neutral (3) (n=2 and

n=3, respectively) more often than teachers at Aurelius International (n=0), Global Studies Prep (n=2), and International Studies Charter (n=0). At Midwest International, this matches student valuations of technology. At Trinity Preparatory, however, this was in contrast with student valuations of technology. At International Studies Charter, there was a strong consensus around the role of technology: all but one teacher perceived technology to be Very Important (5). This suggests not only differing teacher understandings of technology across schools but also the potential for both similarity and differences across groups within the same school.

Figure 5.6. Perceived Importance of Digital Technology by School: Teachers

Survey question: "How important is learning about digital technology in education today?"

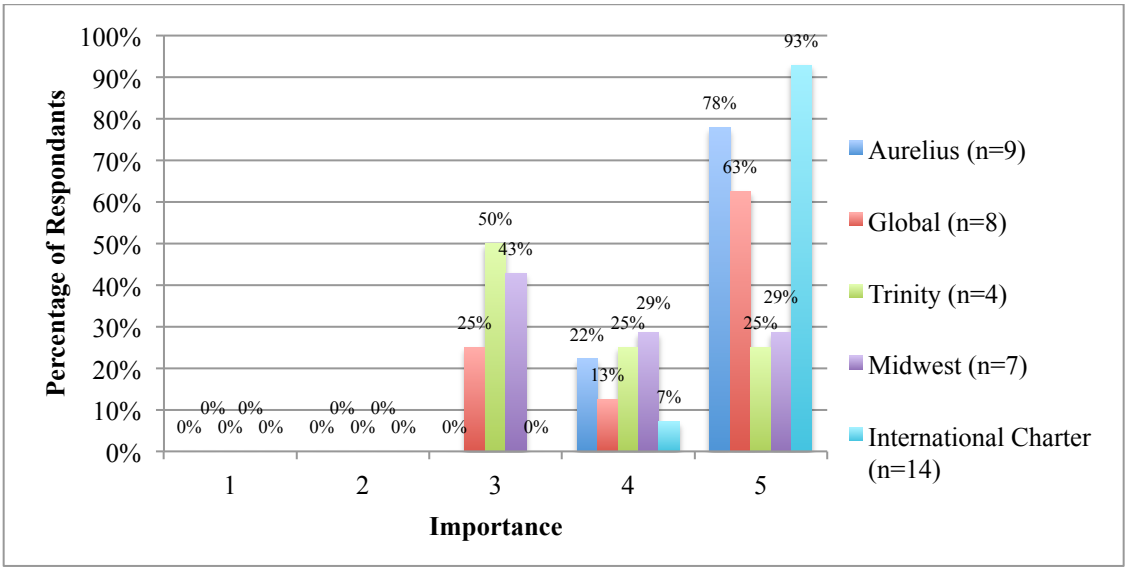


Figure 5.6 Bar graph representing teachers' perceived importance of digital technology in education today across schools. N=42. Data have been rounded to whole numbers to improve readability. X-axis key: Not Important/1; Not Very Important/2; Neutral/3; Important/4; Very Important/5.

This initial question on technology's perceived importance in education today points to a rich complexity of understandings of digital technology across individuals, schools, and groups. Greater insight into that complexity—what drove these perceptions, how participants positioned digital technology through discourse, and what this meant for understandings of global education—came from the subsequent open-ended question that asked participants to explain the importance they ascribed to technology in education today. These responses were analyzed in a few ways. First, data were analyzed through multiple rounds of inductive coding; this allowed participant discourses to emerge from the data, in line with an ecological theoretical approach. In addition, data were also analyzed through deductive coding, with codes stemming from the technology discourses reviewed in the literature (see Chapter 1); this allowed emergent trends in the data to be compared with established technology discourses (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009). Finally, throughout both inductive and deductive coding processes, a critical discourse analysis approach was taken, looking to link micro-level textual features to larger societal discourses and scales (Blommaert, 2005; Fairclough, 2001) (see

Chapter 2 for an extended discussion of survey analysis). In what follows, I discuss both participant-generated discourses as well as point out any alignment with discourses from the literature review as needed.

One of the most common discourses that participants used to position digital technology is illustrated in the quotes below:

> #1 I don't think this needs an explanation - **technology is here to stay**[19] and we don't help our kids learn how to use them they are at a disadvantage.
> -Parent, Aurelius International
>
> #2 **Everything revolves around technology**.
> -12th Grader, Midwest International
>
> #3 Digital and electronic technologies **continue growing and it will not stop**. The spreading pretty much follows the pattern that a [sic] idea sprouts to an App, a game, and some technique for people to use. Therefore the understanding of digital technologies is quite important and hands on learning seems to be the most efficient way to learn digital technologies.
> -Parent, Midwest International

This discourse referenced a present (Quotes #1, #2) and future world (Quotes #2, #3) marked by digital technology: it was "here to stay" (Quote #1) and therefore students needed to be prepared to engage with it. On the one hand, this discussion of technology in terms of its centrality in the present and the future could link into the utilitarian discourse reviewed in Chapter 1: within a utilitarian discourse, digital technologies are seen as necessary in education because they prepare students for their future careers as well as bolster national economic competitiveness and national security (Selwyn, 2011). On the other hand, however, this discourse contained an all-encompassing element that distinguished it from a utilitarian discourse: technology was not only increasingly incorporated in jobs and in security initiatives; technology was everywhere, in all facets of work and of life. To note the qualitative break with a utilitarian discourse, I call this an *omnipresence*[20] discourse in which technology was cited as central to due to its ever-present yet amorphous role in present and future realities.

Additional layers could at times be detected within this omnipresence discourse, as evidenced in Quote #3 as well as in the following examples:

> #4 As technology develops, if people don't **keep up**, **they will fall behind and it is difficult to survive**. For many people, it is hard to understand technology and some even refuse to accept it, however, **we all know that technology is the future.**
> -11th Grader, Global Studies Prep

[19] The use of bold in data excerpts is used throughout the dissertation to indicate segments that will be highlighted in subsequent analyses.

[20] To support identification of the discourses of digital technology enumerated in survey data, discourse names are italicized.

#5 Technology is **taking over the world**. **Everything is soon just going to be all about technology** so it would be a good idea to be educated about it
-9th Grader, Global Studies Prep

#6 It is **simply the way the world has headed** and again students need it to **survive** in the real world.
-Parent, Aurelius International

Quote #3 references the sustained development of technology: "digital technologies continue growing and it will not stop." The singular "it" in the second clause here most likely indexes growth, not the digital technologies, referenced in the plural. This quote points to the perception that digital technology has developed rapidly over the past 50 years as well as the assumption that this growth will continue down the road. This discourse similarly appears in national-level rationales for technology's inclusion in education, such as the National Education Technology Plan (U.S. Department of Education, 2010). The inclusion of technology in education, then, would be driven by its perceived omnipresence but also, relatedly, by its rapid development and change.

This rapid pace of change in technology can also detected in Quote #4 within the phrase "keep up:" the assumption of anticipated continued growth, development, and change in digital technology. Moreover, this student also indexes the perceived consequences of not keeping up with technology: to "fall behind." On a first level of analysis, we can similarly link this understanding of technology to its rapid development: this accelerated pace and progress creates a sense that intentional effort needs to be exerted in order to stay on top of technological change—keeping up with the changes or being left behind.

However, we might also entertain an additional level of analysis here, centered on what it means to "fall behind." For example, technology's omnipresence was not always described in a neutral fashion; rather, at times, it was described as "taking over the world" (Quote #5) or "creeping" (Parent, Global Studies Prep) into every facet of life. This suggests that, for some participants, technology's anticipated presence and growth, now and in the future, carried with it a more nefarious quality. In addition, for some participants, the perceived stakes of including technology in education went beyond the more neutral frame of "keeping up" with technology: learning about technology was more than simply preparing for an imagined future world, but it was crucial to survival (Quotes #4, #6). This emotive, valenced language could suggest, then, that a layer of concern or anxiety could at times exist within the omnipresence discourse as well as in digital technology's positioning in global education today.

Another prominent discourse reproduced in participants' explanations of digital technology's importance was an *economic opportunity* discourse, as illustrated in these quotes:

#7 A lot of **jobs** now a days involve technology
-12th Grader, Global Studies Prep

#8 **The U.S. needs an educated work force** so that American companies can hire our high school and college grads that have the technological aptitude to succeed in their work. Learning about digital technologies and having access to them early in school and continuing through college, will allow our children to become

comfortable with it and be **competitive in it's usage with children from other economies and countries**
-Parent, Global Studies Prep

#9 Students today must have an understanding and confidence with working with a variety of technologies in order to be **successful and flexible in their future employment endeavors**. As we are **not able to predict the types of jobs** that will be needed in the future, it is imperative that we empower students with a well-rounded exposure to a number of different technologies so that they can effectively communicate and work in a **future, unknown world**.
-Administrator, International Studies Charter

#10 People are continuing to **invent new and more complex technology**, and we need to **stay caught up so that we aren't left behind**. **Companies expect you to know** how to use these things when you work there, because they can make things easier and reduce human error. If you don't even know about Microsoft Word or something, how are you supposed to know about the recent stuff?
-10th Grader, Aurelius International

In a first layer represented by Quotes #7 and #8, this discourse positioned digital technology in terms of jobs and the U.S. economy: understanding and being able to use digital technology led to increased individual chances for employment (Quotes #7, #8) as well as strengthened the national economy in the face of increased global competition (Quote #8). In many ways, this discourse stood in line with the utilitarian technology discourse seen in Chapter 1—positioning digital technology as a way to shore up economic advantage on individual and national levels (Selwyn, 2011). It did not, however, include reference to military security, which was a part of the utilitarian discourse reviewed in Chapter 1. Indeed, positioning technology within a national military or security discourse was very infrequent amongst survey responses.

In addition to this, Quotes #9 and #10 also echo the rapid change and resulting unpredictability that comes with digital technology seen with the omnipresence discourse: the "unknown" nature of the future and of the job market (Quote #9) as well as the need to "stay caught up" with these changes (Quote #10). These threads of change and unpredictability were at times present within the economic opportunity discourse and could arguably illustrate a neoliberal layer to the economic opportunity discourse: the flexibility required of neoliberal subjects to prepare for a volatile job market and larger world. Digital technology, as a result, was positioned as a way to prepare students for that unpredictability and that market (Bae & Park, 2016; Block et al., 2012; Duchene & Heller, 2012a; Park & Lo, 2012). This neoliberal discourse, subsumed within the larger economic opportunity discourse, underscores the potential for digital technology—as well as for global education—to be positioned as a way to signal allegiance to the neoliberal market and to prepare students for its volatility as well as their vulnerability on it.

Another common discourse reproduced by survey participants linked digital technology to *learning*:

#10 Having an iPad in class at school helps me **easily access, assignments, informTion [sic], and tips**.
-11th Grader, Global Studies Prep

#11 Technology is advancing and using technology can **advance and enhance education**.
-11th Grader, Aurelius International

#12 At International Studies Charter, our students use technology often. Technology is used in the classroom daily as **an educational tool**.
-Teacher, International Studies Charter

As we can see here, this discourse lauded technology for its ability to support and enhance learning and education. Strikingly and linked to the omnipresence discourse discussed above, this discourse did not often specify how technology could support learning; rather, technology often remained an amorphous tool without much pedagogical specification, such as in Quotes #10 and #11. Admittedly, this may have resulted from the survey instrument itself and the open-ended nature of its questions. Nevertheless, we can say that this learning discourse aligns with the technology-as-benefit to learning discourse seen in Chapter 1 (Clark et al., 2013; Kern, 2015; Richtel, 2010; Taylor, 2012), although with some potentially problematic caveats.

Not all participants were fully convinced that technology could benefit learning, even in the amorphous way described above. Indeed, another common discourse reproduced among participants, especially teachers, called for caution around digital technology:

#13 However, technology provides a set of tools for learning. **Learning about the tools should not replace other core learning of science, language or arts**. One always learns the most current tools of the trade on the job, but is rarely given the chance for deep subject learning after college.
-Parent, Midwest International

#14 I think the greatest value we provide students with respect to digital technologies is **how to use the technology responsibly**. Many of our students do not understand that once posts/pictures are placed on the internet, the information remains indefinitely. I think the kids feel there is an anonymity to what they post, which isn't true.
-Teacher, Global Studies Prep

#15 It is important for students to learn technology **as long as it does not overshadow social interactions or communications.**
-Teacher, Trinity Preparatory

These quotes illustrate the two primary features of this discourse. First, we see a balance component: technology should not replace "core" subjects (Quote #13) or social learning (Quote #15) but should be balanced in its integration into education. Second, there is a call for responsible technology usage: teaching students to think about and use technology in a prudent, measured manner (Quote #14). This *balanced and responsible use* discourse points to a perception of technology as important in education but also of the need to place restrictions or boundaries around it. This adds a level of nuance to the overall importance ascribed to technology, illustrating where and how limits were drawn within that overall importance.

In addition, we might also consider relating this discourse to the age-old perception of technology as a threat seen in Chapter 1 (Baron, 2009). The use of words like "replace" (Quote #13) and "overshadow" (Quote #15) suggest a negative association with technology's integration in education. Moreover, the action of replacing or overshadowing suggests a perception that technology could be poised to negatively shift or impact certain aspects of learning and development, such as social interactions (Quote #15) or "core" subjects (Quote #13), if left unsupervised. Importantly, within these quotes were also assumptions about learning and development: for example, social interactions and learning were often situated as occurring primarily in face-to-face interactions, rather than digital ones (Quote #15); similarly, core subjects and learning were defined in relation to what we might call "classic" and clearly-delineated disciplines—math, science, language, arts—with little room made for the inclusion of alternative or new ways of knowing or learning (Quote #13). When viewed from the technology-as-threat perspective, then, the balanced and responsibility discourse underscores a level of concern about what and how students learn today and tomorrow, in comparison to what students learned in the past.

Alongside these predominant technology discourses was a less prominent yet still salient discourse: *communication and connection* with others via digital technologies:

> #16 In today's society, they are the most important and essential way of **communicating, learning and expanding one's perspective and awareness.** -Teacher, International Studies Charter

> #17 Computers and other technology are increasingly taking over, and they are a **good way to connect with other people**. Also technology helps get jobs done faster and more easily. -6th Grader, Aurelius International

This discourse focused on connection with others (Quotes #16, #17) and the learning that could take place as a result (Quote #16). In some ways and at times, such as in Quote #16, communication and connection via digital technologies was linked to building awareness of other people and broadening perspectives. However, more often than not, this discourse remained tied to more ambiguous connection that did not specify the results of said connection. Without the ability to follow up with participants—a limitation of the research design as well as much survey research—, there was no way to clarify this connection. We can say, then, that at times this discourse aligned with the cultural understanding and awareness discourse reproduced around second/foreign language, although not often.

As was the case with second/foreign language and as predicted by ecological theory, participants reproduced multiple discourses[21] at once, positioning digital technology in different ways at the same time. For example, in Quote #17 above, the student positioned technology in terms of its omnipresence; in terms of communication and connection; and in terms of either a learning or economic opportunity discourse, depending on how you interpret the use of "jobs"

[21] Admittedly, the multiplicity seen here and throughout the study could stem in part from the construction of the discourse categories themselves; this represents a limitation of the study to be further discussed in the final chapter of this dissertation.

coming from a 6th grader. This was the case with most participants in both this section and the following section.

These articulated discourses cropped up to greater and lesser extents among different survey groups (parents, teachers, and students), suggesting trended understandings of digital technology across groups within global schools. For example, as a group, teachers most often reproduced a balanced and responsible use discourse. An omnipresence discourse and an economic opportunity discourse were also reproduced by some teachers, although to a much lesser extent than the balanced and responsible use discourse.

Conversely, parents most often positioned technology in terms of its omnipresence: technology's looming presence in the present and future. A second prominent discourse among parents was an economic opportunity discourse; this discourse was reproduced much more frequently by parents than by teachers. A learning discourse was a third most prominent discourse amongst parents. In contrast to teachers, the balanced and responsible use discourse was less frequently reproduced among parents.

Students mostly thought about technology in terms of its omnipresence as well as how it could facilitate their learning or schoolwork. An economic opportunity discourse was an infrequently-reproduced discourse for students in the survey sample. Finally, while the communication and connection discourse was a less prominent discourse across the whole sample, students were the group to most often reproduce this discourse. This was particularly salient at Global Studies Prep and at Midwest International. These differences in how groups across global schools positioned digital technology suggests both the potential for tension in how this component was perceived as well as in how global education was more broadly conceived.

In contrast to second/foreign language, there was not much variation in how digital technology was positioned across schools: outside Global Studies Prep and Midwest International students' more frequent reproduction of a communication and connection discourse, there was little difference in the discourses schools used to position digital technology and to rationalize digital technology's importance. This suggests some continuity in how digital technology was positioned across groups and schools despite and within the multiplicity and complexity detailed above.

Which Technologies and Why?

The first set of survey questions on digital technology's importance in education today suggests both variation as well as trended positioning of this component and its value/role in global education: individuals drew on and reproduced several different, often over-lapping discourses to position digital technology at the same time that school groups trended in similar directions across schools. This points to the complexity that comes with the ecological approach taken in this study as well as that is predicted by ecological theorizations of discourse.

Additional insight into the portrait of discourses used to position digital technology within global education came in the second set of questions that asked participants to identify which digital technologies were most important to learn and to explain their answers. The first question presented respondents with a list of common digital technologies and asked them to select the top three most important (see Figure 5.7). The list of options presented to respondents stemmed from the two pilot studies described in Chapter 2.

Figure 5.7. Survey Question on Which Digital Technologies were Most Important

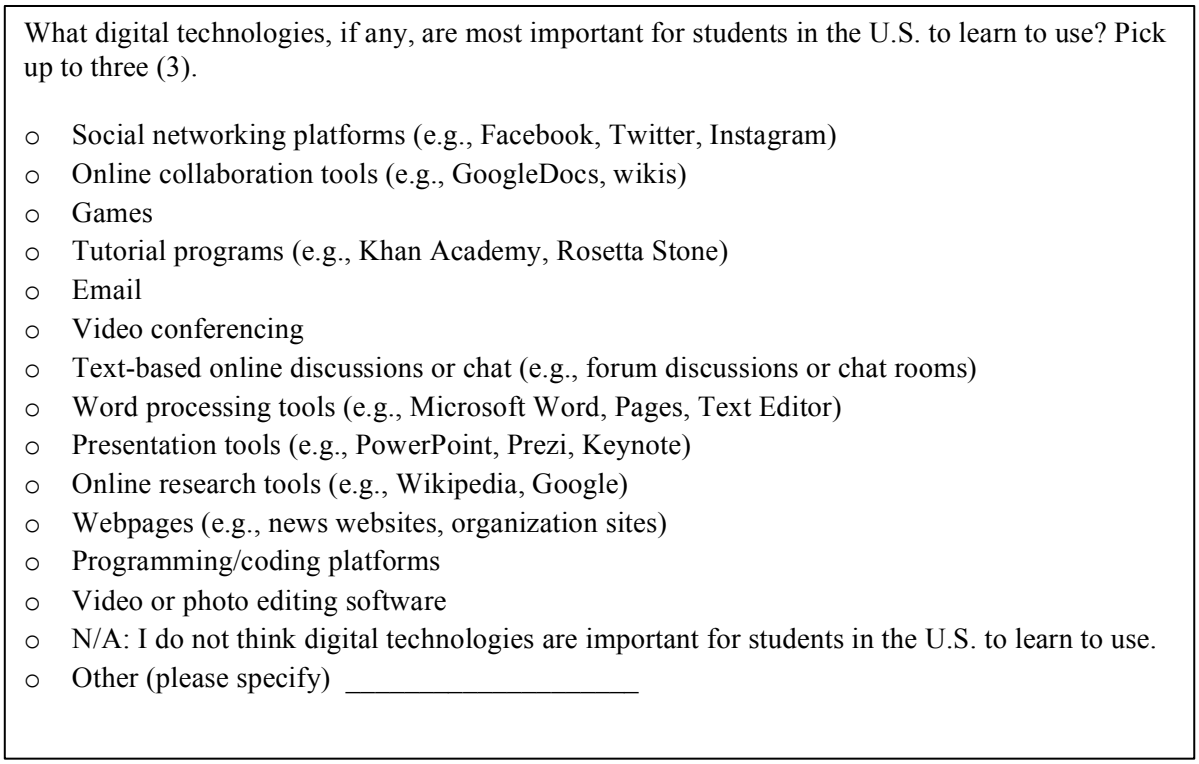


Figure 5.7. The list of digital technologies that survey participants had to choose from through the online platform Qualtrics.

The three digital technologies that respondents selected were tallied and analyzed. There were 15 options available to respondents. The top four most chosen technologies were: online research tools (55%, n=276), presentation tools (49%, n=250), online collaboration tools (37%, n=185), and word processing tools (34%, n=173) (see Figure 5.8). While a clearer portrait of why individuals selected these technologies and how they were positioned via discourse will come in the next section, we can initially observe that top choices are all general tools that are traditionally and commonly seen as central to both school and future employment endeavors.

Looking at the other end of the spectrum, the four least selected technologies across the whole sample were: video/photo editing software (10%, n=51), games (6%, n=28), video conferencing (n=28), and online discussion/chats (5%, n=27) (see Figure 5.8). Conversely, then, these technologies are not often associated with school or employment endeavors, tying more into the affective, aesthetic, and engaging qualities of digital technology.

Figure 5.8. Top Four Most Chosen and Four Least Technologies: All Respondents

Survey question: "What digital technologies, if any, are most important for students in the U.S. to learn to use?"

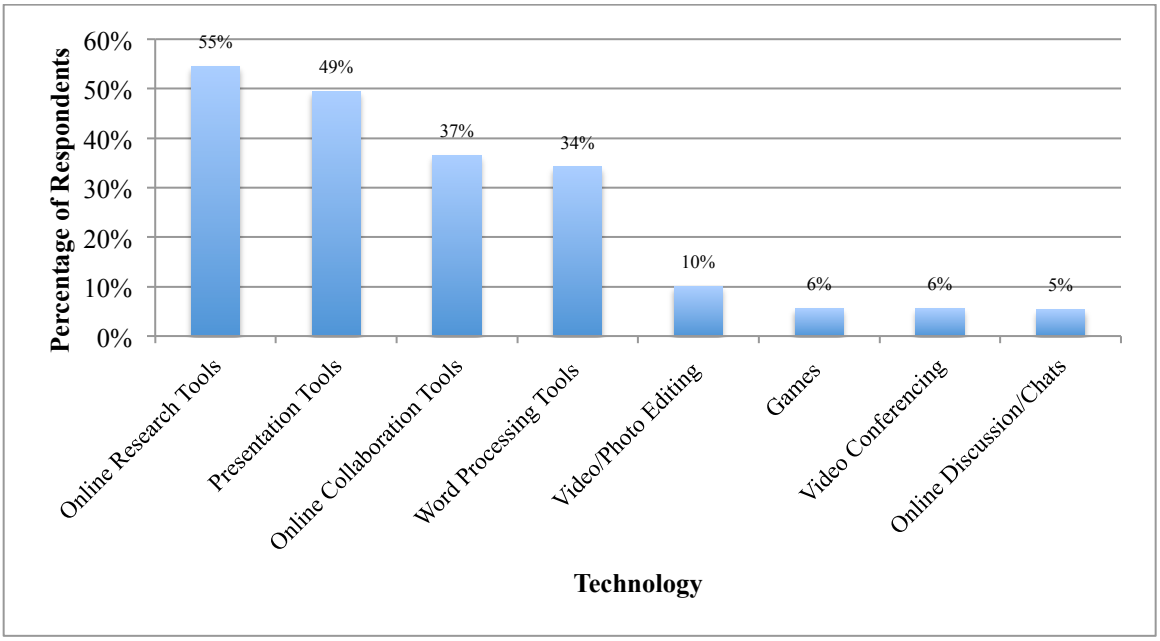


Figure 5.8. Bar graph summarizing the top four and the least four selected most important digital technologies for students in the US to learn across all survey respondents. Data have been rounded to whole numbers to improve readability. N=505. The choices not represented here were: social networking platforms (21%, n=106); tutorial programs (15%, n=78); email (16%, n=81); webpages (17%, n=86); programming/coding platforms (18%, n=91); other (2%, n=9); and not important (1%, n=4).

This macro picture of how important participants found these different technologies to be suggests that participants across the board varied in how they understood technology as well as how it related to global education. Within this macro picture, there were some differences across groups (parents, teachers, and students) and across schools that suggest additional implications for how participants, groups, and schools understood digital technology in global education. For example, parents and students chose tutorial programs as important digital technologies more than teachers. Parents also selected online research tools less than other groups but chose programming/coding platforms more than any other group (see Figure 5.9). This might suggest that parents and students saw more value in tutorial programs than teachers, who might have found these programs both pedagogically problematic and professionally threatening (Blake, 2008). Moreover, we could wonder if parental gravitation toward coding corroborates the economic opportunity discourse and orientation seen in the previous section, given the hype and value attributed to this skill set today (Hatter, 2016).

Figure 5.9. Comparison of Digital Technologies by Group: Online Research Tools, Programming/Coding Platforms, & Tutorial Programs

Survey question: "What digital technologies, if any, are most important for students in the U.S. to learn to use?"

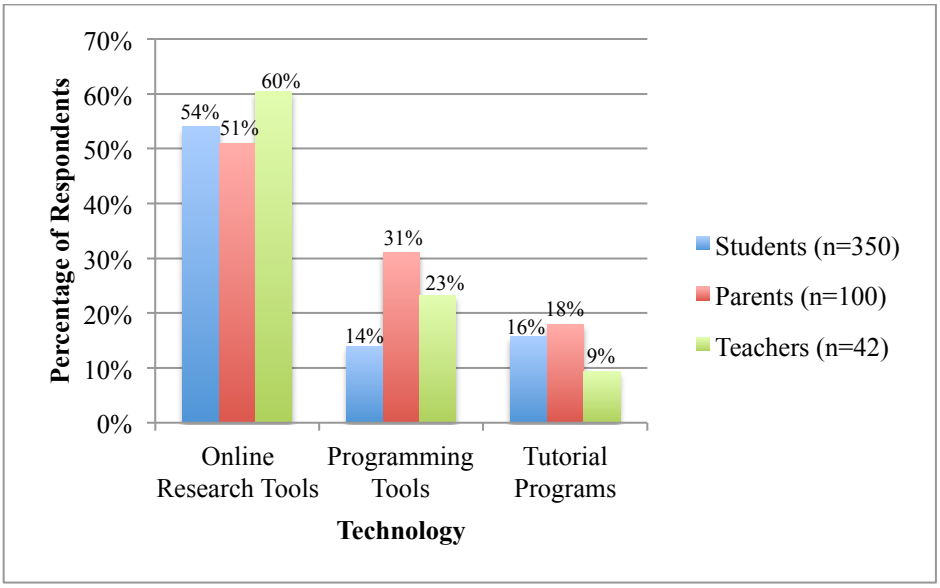


Figure 5.9. Bar graph comparing, by group, three digital technologies (online research tools, programming/coding platforms, tutorial programs) chosen as most important digital technologies for students in the US to learn. N=505. Data have been rounded to whole numbers to improve readability.

In addition, students as a whole chose social networking, games, and email as important technologies more than any other group; conversely, they chose online collaboration tools less than other groups (Figure 5.10). The selection of social networking and games may suggest that students saw more educational value in tools like social networking and games, although not necessarily: as the question asked which technologies were most important for U.S. students to learn to use generally, without limitation to educational spaces or uses, this increased preference could link into the importance that these technologies play in their social and personal lives. Conversely, students' reduced selection of online collaboration tools may relate to a perceived limited value of these tools in education or perceived limited value more generally.

Figure 5.10. Comparison of Digital Technologies by Group: Social Networking, Games, Online Collaboration Tools, & Email

Survey question: "What digital technologies, if any, are most important for students in the U.S. to learn to use?"

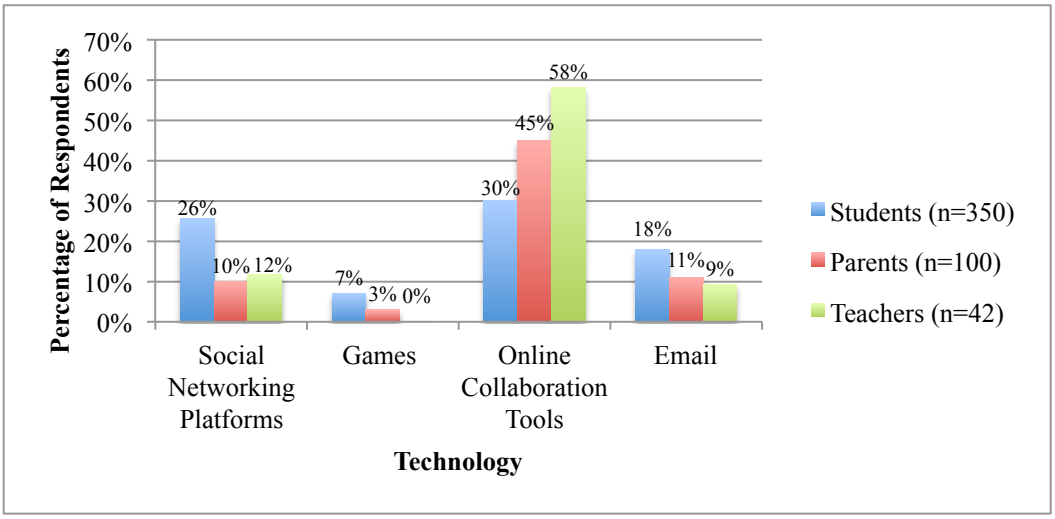


Figure 5.10. Bar graph comparing four digital technologies (social networking platforms, games, online collaboration tools, and email), by group, chosen as most important digital technologies for students in the US to learn. N=505. Data have been rounded to whole numbers to improve readability.

Similar to the previous section, then, these differences across student, parent, and teacher groups point to potential tension in how digital technology was positioned and how it contributed to overarching understandings of global education. Several of these overall group trends could be further broken down by looking across schools. For example, as depicted in Figure 5.11, students at Global Studies Prep selected social networking tools and games as important digital technologies more than their peers at Midwest International, Trinity Preparatory, and Aurelius International. The sheer number of Global Studies Prep students who participated in the study (n= 272) increased the average across students, giving a slightly skewed portrait of overall student attitudes toward these two digital technologies overall. This suggests that, within larger student trends on the importance of technology, there was the potential for significant differences in which digital technologies were considered important across schools, potentially altering digital technology's larger positioning in global education across groups and schools.

Figure 5.11. Comparison of Student Selection of Social Networking Tools and Games by School

Survey question: "What digital technologies, if any, are most important for students in the U.S. to learn to use?"

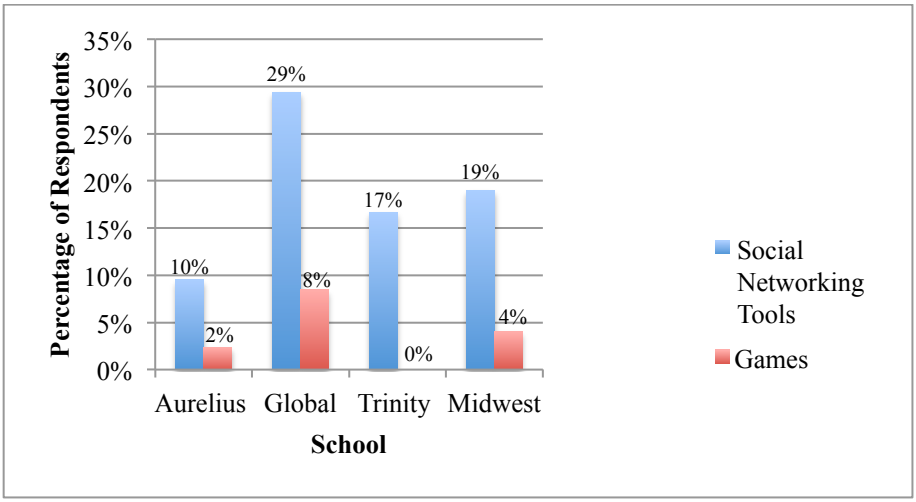


Figure 5.11. Bar graph comparing student selection of two digital technologies (social networking tools and games) as most important digital technologies for students in the US to learn by school. N=350. Focal school students were not included due to small number of responses. Data have been rounded to whole numbers to improve readability. Aurelius International (n= 42); Global Studies Prep (n= 272); Trinity Preparatory (n= 6); and Midwest International (n= 26).

Similarly, the overall trend in teacher selection of social networking belied large differences across schools. As seen in Figure 5.12, teachers at two schools, Global Studies Prep and Trinity, did not select social networking tools at all; however, teachers at Midwest International, Aurelius International, and, most prominently, International Studies Charter did select these tools as important for students to learn about. This again suggests that, within larger trends of technology's overall importance across groups seen in the previous section, there were differences in which technologies were important across schools.

Figure 5.12. Comparison of Teacher and Parent Selection of Social Networking Tools by School

Survey question: "What digital technologies, if any, are most important for students in the U.S. to learn to use?"

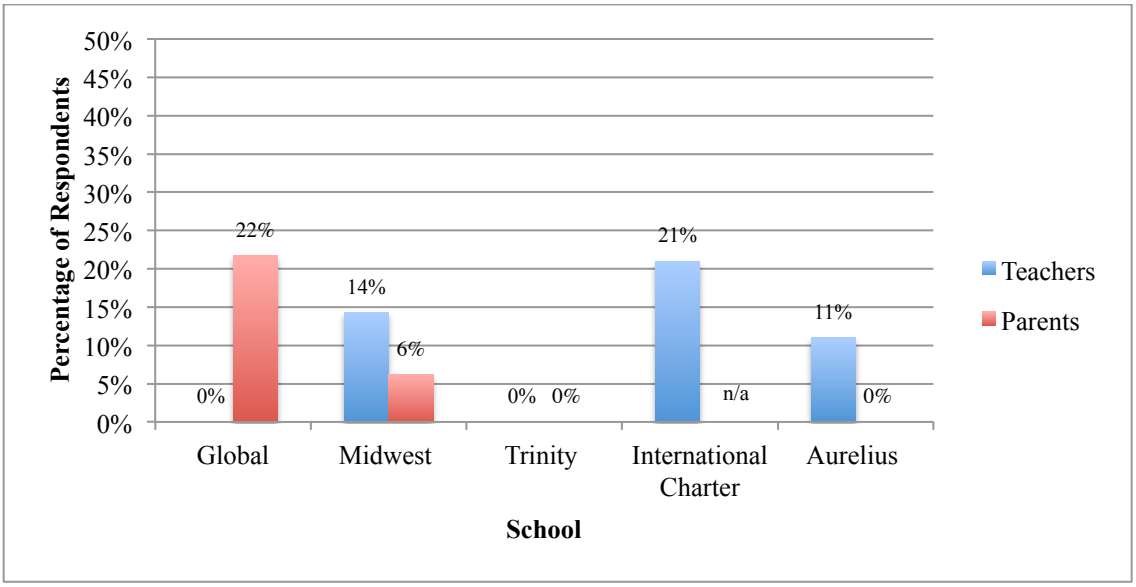


Figure 5.12. Bar graph comparing teacher (N=42) and parent (N=100) selection of social networking tools as most important digital technologies for students in the US to learn. Data have been rounded to whole numbers to improve readability. Teachers: Global Studies Prep (n= 0); Midwest International (n= 1); Trinity Preparatory (n= 0); International Studies Charter (n=3); Aurelius International (n= 1). Parents: Aurelius International (n= 0); Global Studies Prep (n= 5); Trinity Preparatory (n= 0); Midwest International (n= 4). Focal participants were not included due to small responses.

Interestingly, parents at Global Studies Prep swung in the opposite direction in terms of social networking tools than teachers: parents at Global Studies Prep selected social networking tools more than Global Studies Prep teachers as well as than their peers at other schools (see Figure 5.12). Two things to note here, one on Global Studies Prep/social networking tools and one on the general significance of these differences across groups. First, these school-based differences paint a very mixed picture at Global Studies Prep with respect to social networking tools: students and parents both found these to be more important than did their peers at other schools, while Global Studies Prep teachers found them to be less important than did teachers at other schools. This points not only to potential tensions within Global Studies Prep but also to the potential for the stronger parental influence on students in terms of their developing understanding of digital technology.

Second, these differences in which technologies were important across schools more generally suggest variation in positionings of digital technology not only across groups but also across schools: while schools and groups largely agreed on how digital technology was positioned in terms of its general importance in education, there were distinct ways in which technologies were deemed important. As we will see in the next section, this may or may not

have implications for how digital technology was positioned across schools and in relation to global education.

Indeed, as was the case in the previous section, the open-ended question that followed the selection of important digital technologies and that asked participants to explain their choices offered an additional opportunity to illuminate the discourses that participants drew on to position digital technology within a global education. Several discourses were reproduced across the whole sample; in contrast to the second/foreign language results, however, the pattern of discourses that participants used to position digital technology was very similar across the two questions/sections. This suggests that, while there were differences in which digital technologies were deemed important, their perceived positionings in education remained relatively stable. For example, as has been the case throughout survey responses for technology as well as for second/foreign language, an *economic opportunity* discourse was frequently reproduced in explaining which digital technologies were most important:

> #18 Students need to use Word processing and Presentation tools if they plan on extending their **education or getting a job after HS**. To **compete with other countries**, I think each HS student should leave knowing how to code and program as well. In China, it's part of their curriculum! **We will be left behind** if we don't start making technological training a priority.
> -Teacher, Aurelius International

> #19 **Business life**
> -12th Grader, Midwest International

> #20 Properly prepares the students for **college and their careers**
> -Parent, Global Studies Prep

As was the case previously, learning about digital technologies was linked to competing on the job market. Some responses, such as Quote #18, specified how the specific digital technologies related to that job market while others (e.g., Quotes #19, #20) did not.

Outside this economic opportunity discourse, a *learning* discourse was also prominent as respondents explained their technology choices:

> #21 **Tutorial programs** are a great resource for students to help with their **schoolwork**. Word processing tools and online research tools are helpful tools for **not only schoolwork but other areas as well i.e. job.**
> -Parent, Global Studies Prep

> #22 **In order to succeed in school**, students have to be able to efficiently **write their essays**. In order to do so they need the skills to do **research and the tools to write down their ideas**. Other than essays, students also need to be able to **communicate** with their teachers, friends, and other people in a professional yet fast way which is best done through email.
> -12th Grader, Aurelius International

> #23 I believe these three can **help students with projects and studies**.

-Parent, Aurelius International

This learning was associated with the specific tasks set out for students in school (e.g., Quotes #21, #22, #23) but also with increased efficiency in terms of submitting assignments and connecting with teachers (Quote #23). As was the case in the previous section, this discourse linked technology to supporting and benefiting learning and school seen in Chapter 1 (Clark et al., 2013; Richtel, 2010; Taylor, 2012).

Although less prominent than the previous two discourses, a *communication and connection* discourse was also salient in respondents' explanations of which technologies were important. This discourse had two manifestations. The first aligned with what we saw in the previous section:

#24 I do find technology important because it **keeps me up to date with the news as well as keeps me in touch with my friends.** The reason why I would not rate it a 5 is because it has caused many accidents and deaths, especially those pertaining to car accidents. Also, many people become disconnected with reality and refuse to go outside and socialize with actual people, since they believe it is possible to do so on their device.
-10th Grader, Aurelius International

#25 Social networking platforms allow a person to **make new friends, learn about new cultures, and keep up with the news.** Without tumblr, I would not have learned of the events in Ferguson for a while. Research tools like Google allow a person to learn about whatever they want very quickly. Without Google, I wouldn't bother trying to learn more random information. Just yesterday, I used Google to find out where Abraham Lincoln was born. Tutorial programs are also very useful. On Saturday night, my mom and I used Khan Academy to look at brain teasers. Last week, I used Khan Academy to learn to code.
-11th Grader, Global Studies Prep

#26 Digital technologies, such as iPads, are helpful to **broaden students' learning horizons**. Though they are helpful to further our learning experience, iPads aren't really used in class in college, so I don't understand why my school implements them in our curriculum if it isn't used in college.
-10th Grader, Global Studies Prep

This discourse most often centered on the ability of digital technology to connect students with friends, family, and the larger world (Quotes #24, #25). As was the case above, this discourse at times also included an explicit accent on the understanding and awareness of the world that could result from that connection (Quote #26), aligning more with a cultural understanding and awareness discourse seen in Chapter 1 as well as in the second/foreign language chapters.

That said and in relation to questions raised in earlier chapters, we can wonder the extent to which students, such as the 10th grader in Quote #26, believed the discourses they articulated or if they simply were repeating the discourses heard from parents, teachers, and administrators. For example, the use of the phrase "broaden students' learning horizons" may seem odd, coming from a teenager—the phrase seems plucked whole from another source, without changing the

pronoun to the self-inclusive "our learning horizons" which would signal appropriation and personal integration of this notion. Similar instances could be found in Quote #24 ("keep up to date with the news" from a 10th grader) or Quote #17 ("helps get jobs faster" from a 6th grader). This may suggest influences from higher-level hierarchical scales (e.g., teachers, administrators, and parents) on students, in keeping with an ecological theoretical and analytical frame. It would also then underscore the in-process nature of student views of technology as well as language: students were engaged in a process of voicing and re-appropriating the discourses they hear and see in their school environments.

The second, more specific manifestation of the *communication and connection* discourse that was not particularly salient in the first section emphasized the *communication potential* of digital technologies:

> #27 Research tools provide students with knowledge from many sources. Word processing tools allow them to formulate their ideas and interpret their research, and email allows them **to share their ideas and anything else with anyone they wish.**
> -10th Grader, Aurelius International

> #28 Finding quality information is critical, hence proper research skills are of paramount importance. Having the ability to digest and articulate this information is crucial, and we do this through writing (Word processing tools). We must also **communicate our findings. While there are many ways to do this, and email is perhaps decreasing in popularity, it is still the most important avenue to communicate information.**
> -Teacher, Aurelius International

This manifestation of the communication and connection discourse emphasized digital technological tools' capacity to convey and share messages, ideas, and meanings to the world (Quotes #27, #28). While similar to the more general positioning of technology as facilitating communication with friends and family, this accentuated an active dissemination of ideas to a larger audience. Similar to the communication discourse found in the second/foreign language data, this discourse remained largely ambiguous: the results of this communication and this connection were not specified, making it unclear how it might impact and contribute to understandings of global education: on the one hand, this communication and connection with the larger world could amount to exchanging and negotiating meaning in such a way as to foster better understanding about the larger world. On the other, it could also work to further individualistic and self-centric orientations in which connection and communication stem from self-promotion and self-interest.

Alongside these more prominent discourses, a few less prominent discourses were also reproduced. For example, some participants did not see technology as necessary in the classroom although it remained highly valued:

> #29 **exposure to digital technologies will happen** without being taught in the classroom
> -Parent, Global Studies Prep

#30 Digital technology is a **waste of time** for students in private schools. Other than learning key boarding and certain tools such as power point, in my opinion it's a waste of time. I would prefer more time be spent in the library. **All of the students know how to search and can do so from home.**
-Parent, Midwest International

In this discourse, technology was considered important but a "waste of time" in the classroom (Quote #30). Specifically, learning about digital technology was seen as a natural outcome of students' daily activity and engagement with a world already marked by digital technology. Moreover, this positioning presumed that students interacted with digital technologies outside of the classroom and that they would learn these technologies effectively and efficiently without instruction. Finally, this discourse also suggests the assumption that schools specialize in other things—such as access to and the reading of print technologies, as indicated in Quote #30; the message, then, is that educational institutions do not and perhaps even should not specialize in digital technology. This *digital native* discourse indexes a set of assumptions—e.g., all students have access to technology and learn to use them through informal use—that has been shown to be problematic (e.g., Brown & Czerniewicz, 2010): for example, not all students have access to the same or even any digital technologies (Salpeter, 2006); moreover, simply placing a digital technology in students' hands has not always been shown to lead to effective use (Toyama, 2010). Finally and in terms of global education, this digital native technology discourse might suggest that students could ultimately miss out on uses of technology that directly target and support global education missions and visions.

Another less prominent discourse linked into what technologies should be taught in school:

#31 They are all important, but the ones selected are the more difficult/important ones and could **benefit from teacher instruction**.
-Parent, Midwest International

#32 The three functions I high-lighted are the **basics. If they learn these correctly, they can easily learn the others.**
-Parent, Midwest International

In this *technology fundamentals* discourse, there was a differentiation in technologies: some technologies were considered more fundamental—either because they were more difficult to learn (Quote #31) or because they were the foundation for additional learning (Quote #32). In both cases, students were seen to benefit from explicit teacher instruction in these technologies: this instruction helped students master challenging platforms (Quote #31) or secure baseline knowledge from which they could independently and efficiently learn additional technologies without instruction. This discourse suggests a hierarchical understanding of different digital technologies, with some meriting attention in classroom spaces. This technology fundamentals discourse does not neatly align with the different discourses of technology outlined in Chapter 1: it does not specify the ends to which the different technologies selected will be used. This ambiguity, likely due to the construction of the survey instrument itself, makes connections to and ramifications for global education difficult to pinpoint.

Looking across the discourses used to position which technologies were important, there was an interesting omission: while an omnipresence discourse was strongly reproduced among all participants in the first section, this discourse was not prominent in participants' explanations of why their selection of specific digital technologies were important. This likely has to do with the survey questions themselves: the specificity of these two questions in comparison to the first two likely led participants to articulate with more clarity the role they imagined for digital technology in the future. That said, the potential ramifications of the omnipresence discourse still exist and will be further explored in the next chapter as well as in the final chapter.

Looking now across groups (parents, teachers, and students), parents as a whole group more often cited an economic opportunity discourse than did students or teachers; this confirms a similar trend seen in the previous section as well as in the data from the language survey: parents more often positioned both language and technology in terms of economic opportunity than teachers did. While parents also reproduced a learning discourse, they did so less often than students and teachers. In addition, teachers reproduced a learning discourse more than any other group; moreover, teachers reproduced the communication potential of digital technology more than any other group. In terms of the less common discourses, students most often reproduced the communication and connection discourse. Conversely, adults more often reproduced the digital native as well as technology fundamentals discourses. Once again, we see the potential in these findings across groups for tension in how digital technology was positioned in schools and in global education. Moreover, these different positionings would build up different understandings of global education, a point I return to in the final summary section below.

In contrast to the previous section, there were not any major differences across schools in terms of which technologies were considered most important to learn, although minor variations could be seen. For example, while the ratio between discourses of economic opportunity and learning tilted more heavily toward economic opportunity for most parents, this ratio was more even amongst parents at Aurelius International. Teachers at Aurelius International also more frequently evoked the communication potential of technology than other teachers did. Lastly, Global Studies Prep teachers and students both placed a higher emphasis on learning than on economic opportunity when it came to explaining their choices for important digital technologies; in other words, both groups reproduced a learning discourse more frequently and an economic opportunity discourse less frequently than their peer groups at other schools did. These minor variations within the larger trends point both to general consistency in how specific digital technologies and their importance were perceived across groups as well as to the variation that accompanies an ecological research design.

Summary

These minor differences across schools as well as the larger differences across groups (parents, teachers, and students) point to potential implications for schools and for larger understandings of global education as we move forward into a more detailed look at the focal school, The World First School, in the next chapter. Indeed, we can conclude several things from this overview of the discourses used to position digital technology in global education. First, participants across global schools and across groups positioned digital technology through a range of different discourses, situating digital technology most often in terms of its *omnipresence*, its potential for *economic opportunity*, its benefits for *learning,* and the need to temper those benefits with *balanced and responsible* use. Less often but still saliently, digital technology was seen in terms of its *communication and connection* potential, in relation to

students as *digital natives*, and in terms of the importance of *technology fundamentals*. School actors reproduced multiple discourses at once, highlighting a complex portrait of the differing and even conflicting ways in which digital technology was positioned within global education.

Within the multiplicity of discourses used to position digital technology, it is interesting to note, in line with ecological theory, what discourses were not articulated or voiced, what discourses were not used to position digital technology. For example, it is striking that digital technology was not more frequently situated in relation to an international scale; rather, it remained contextualized most often in terms of its local impact in the individual lives of students or schools or in impact on the nation. Admittedly, both the omnipresence discourse and the communication and connections discourse had the potential to index this international scale; however, the broad, sweeping references to the omnipresence of technology rarely specified this particular international scale, maintaining vague references to society and the world more broadly. Similarly, the communication and connection discourse was itself a less prevalent discourse, with explicit or specific references to the international scale being rare. Although it happened from time to time (e.g., Quote #26), technology was rarely specifically and explicitly linked to the world outside the nation across the data sample. This could have implications for global education, suggesting that global education was much more about individual and national goals and ends than international ones.

In a similar vein, it is also striking that technology was not positioned as a way to promote equality or equity in learning or in our world more generally (Warschauer & Ware, 2008). Rather, it was focused more on providing individuals with a competitive edge in uncertain times. While this is not to say that individuals who participated in the survey did not think about equality or equity in global education, it does suggest that this discourse was not used to position digital technology; this may cast doubt on whether or not equity and equality could be fully factored into larger understandings of global education if it did not penetrate how individuals understood technology in education.

For both of these unspoken discourses, it is fair to question whether or not the survey instrument influenced their non-presence in the data. It is possible, for example, that the survey's focus on education and students in the United States may have influenced participant answers and led them to, in turn, focus on the United States in their responses. Moreover, nothing in the survey design prompted participants to think about the relationship between technology and educational inequality.

However, the open nature of the survey questions included in the survey instrument was intended to provide an open-ended space for participants to articulate their attitudes toward digital technology, without *a priori* categorization or assumptions from the researcher. The open-ended nature of these questions allowed participants to articulate the discourses that were most salient to them. Within this frame, I believe that we can maintain a level of confidence in the present interpretation: while these data do not rule out the possibility that these discourses (international scale and equality) played a role in how participants positioned digital technology, the data do suggest that these discourses were not salient in how participants positioned digital technology as much as the other discourses discussed here. Relatedly, we can assume that, given the open-ended nature of these questions, the voiced discourses culled from participant responses were likely the most salient in their positioning of digital technology.

Within the multiplicity of these voiced discourses, the trends across groups that were revealed may also suggest potential ramifications for digital technology, for schools, and for global education. Across the board, parents shared a positioning of digital technology in terms of

omnipresence, economic opportunity, and, at times, neoliberal demands. While teachers also voiced these discourses, they more often positioned digital technology in terms of balanced and responsible use as well as learning. As was the case with language, students presented a very mixed bag of attitudes, positioning digital technology in a range of ways that both aligned and conflicted with the discourses reproduced by their teachers and parents. For example, students positioned digital technology mostly in terms of its omnipresence and its benefits to learning, as adults did; however, students also positioned technology more often in terms of communication and connection than did their parents. This communication and connection discourse was admittedly a less prevalent discourse overall, but, when it cropped up in the data, it came largely from students. We might interpret this mixed bag from an ecological perspective in terms of both hierarchical and non-linear influences (Kramsch, 2002; Larsen-Freeman, 2002): students were influenced by the discourses that the higher organizational levels in their lives (their teachers, administrators, and parents) reproduced, an interpretation corroborated by the different instances of potential voicing or repetition seen throughout this and previous chapters. In addition, however, students also reproduced discourses that the adults in their lives did not, suggesting that students were drawing on additional sources of influence as they formed their understanding of digital technology and the world more broadly. This could stand in line with the non-linear relationships predicted by an ecological approach to discourse: rather than a pure top-down impact of higher organizational levels to lower organizational levels, participant discourses result from a range of influences and sources as well as their interaction (Kramsch, 2002; Larsen-Freeman, 2002).

These differences across groups point to potential tension within schools: with different groups positioning digital technology in different ways, the stage is set for competing understandings of how digital technology should be used and taught in schools as well as for how global education is ultimately conceptualized. I turn now to a study of the focal school to investigate in finer granularity how these groups positioned digital technology within global education.

CHAPTER 6: FOCAL SCHOOL FINDINGS—DIGITAL TECHNOLOGY AT TWFS

Introduction

While the previous chapter provided a larger portrait of how global school actors, groups, and schools across the United States positioned digital technology through discourse, the current chapter provides a detailed look at how digital technology was positioned within one school's larger frame of global education, moving us closer to the overarching query of this dissertation: how understandings of global education manifest in the relationship between second/foreign language discourses and digital technology discourses within global schools.

The focal case study of The World First School (TWFS) was comprised primarily of semi-structured interviews with teachers (n=4), administrators (n=2), parents (n=3), and students (n=8) as well as participant observations of two classrooms (Upper Elementary and Junior High) (Glesne, 2010; Miles & Huberman, 1994; Spradley, 1979). Interview questions used in this chapter focused primarily on perceptions and uses of digital technology in education today.[22] Participant observations used in this chapter focused on amount, context, and purpose of digital technology use. Data (interview transcripts, field notes, and observation recordings) were analyzed in a few ways. First, data were analyzed through multiple rounds of inductive coding; this allowed participant discourses to emerge from the data, in line with an ecological theoretical approach. In addition, data were also analyzed through deductive coding, with these deductive codes stemming from the technology discourses reviewed in the literature (see Chapter 1); this allowed emergent trends in the data to be compared with established technology discourses (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009). Finally, throughout both inductive and deductive coding processes, a critical discourse analysis approach was taken, looking to link micro-level textual features to larger societal discourses and scales (Blommaert, 2005; Fairclough, 2001). In what follows, I discuss both participant-generated discourses as well as point out any alignment with discourses from the literature review as needed. (For more information on the case study design and analyses, including interview and participant observation protocols, see Chapter 2.)

Overall, the case study revealed several, often co-present discourses. Similar to the previous chapter, these discourses clustered around central, tension-filled questions: What is technology? What is its role? While these two questions remained distinct for language at TWFS, participants imbricated the two when it came to technology. In this chapter, I first discuss how participants positioned digital technology via articulated and embodied discourses across school groups. I then conclude with implications for global education, for ecological theory, and for learners.

What is Digital Technology? What is its Role?

In line with ecological theory and with survey findings, TWFS participants positioned digital technology—both in terms of what it is and what role it plays—through a range of

[22] As mentioned at several points, study instruments, including interview questions, asked participants to describe their understanding of second/foreign language and digital technology "in education today" rather than specifically in "global education." This was due to the wide-ranging and often ambiguous understandings of what "global education" means. Given the operationalized definition of global education used in the study and given that all schools in the study met that definition, I make the interpretive connection between "global education" and "education." For more details on this within the study design, see Chapter 2. For a discussion of the limitations of this design as well as next steps, see Chapter 7.

different discourses: in terms of its omnipresence; its threat potential; its capacity to support learning, in a variety of ways; and its importance for the job market. At times, these discourses aligned with the discourses outlined in the literature review and in the survey. However, this was not always the case. To respect the complexity of participants' responses as well as to respect the study's ecological frame, I detail the discourses that participants reproduced and point out any alignment with other discourses as necessary.

Administrators. TWFS administrators drew on several conflicting digital technology discourses. A starting point was digital technology's centrality in both the present day and the future. Lisa, the Head of School, described technology as "an **integral part**[23] [to education today] and "**totally integrated into our lives**." Lisa went on to say:

> Let me put it this way I think that it would be a tremendous disservice ok to not (1.5) help students you know learn about technology and learn to use it responsibly appropriately. Uhm...**because that's the way that the world is working** you know so it is a disservice to to pretend that you know we should not. Uhm we don't know as I say (2.0) research about how good how bad you know whatever. We don't yet have that information in. **But as far as what we can see—first of all this is not gonna change. I mean turn back. It is a reality. Uhm we have a responsibility you know to that.** [24] (Interview, March 4, 2015)

We can note several things here. First, Lisa understood technology to be an essential component to education largely given its central role in the present: technology characterized how the whole world was working (line 3). Moreover, Lisa saw an inevitable future trajectory of technology: the use of phrases like "not gonna change" or "not gonna turn back" (line 6) point to an acceptance of a future dominated by technology. The centrality of technology in both the present and projected future, then, made technology's integration into the school of capital importance (line 7).

Rosa, the Assistant Head of School, echoed the importance of technology in education, citing it as "very needed" (Interview, April 3, 2015). For Rosa, this need for technology was largely future-oriented: "Technology is something that needs to be taught to children because that's **the future of the world**" (Interview, April 3, 2015). Like Lisa, then, Rosa clearly linked the role of technology in education today to the projected centrality of technology in the future world. For both administrators at TWFS, this central yet largely unspecific role ascribed to technology today and in the future illustrates the omnipresence discourse seen with survey participants: digital technology seen as a central part of global education given its perceived in all facets of life today, tomorrow, and in the future.

An additional layer to this omnipresence discourse was also detectable as Rosa elaborated on how she imagined children using technology in this projected future:

> You know I think I imagine them you know uh maybe **a little like Star Wars**. You know because if you see some of these uh I mean ugh I mean you are young but I used to see this [sic] sci fi movies many years ago and I said "oh please. A telephone you know where you can see people from one you know country to the other?" I mean I have family all over and now I can see them when I talk to them. **You know the Jetsons what's that**

[23] The use of bold in data excerpts is used throughout the dissertation to indicate segments that will be highlighted in subsequent analyses.
[24] See p. ii for transcription conventions.

6 **cartoon? It's gonna be like that.** (Interview, April 3, 2015)

Here, Rosa described this future as marked by dramatic technological innovation that could barely be imagined today with her references to science fiction dramas and cartoons (lines 3, 7). This points to a future of innovation and development as well as one of vast, unexplored digital frontiers. This echoes the element of unpredictability that at times laced how survey participants positioned digital technology via the omnipresence discourse: technology was not only to be a key component of the future, but it had the potential to dramatically shift expectations, norms, and life itself in unpredictable, unimaginable ways.

Beyond the omnipresence discourse, administrators did give some detail on how they saw digital technology functioning in education. For example, Lisa primarily acknowledged technology's ability to provide *access* in educational spaces. She specified what exactly was accessible via digital technologies in the following quotes:

1 I mean the the digital libraries I mean **it's just amazing what one has access to**. Uhm
2 and this is part of what [students] slowly learn of how "how can I access? how can I—"
3 and that this is for them but this is for **for the teachers you know for everyone it's it it**
4 **opens up I mean it changed the world. Uhm and our access to information.** (Interview, March 4, 2015)

She went on to say that:

5 The **possibilities you know are and are enormous**. Uhm where I can see that and I
6 know you know some schools uh secondary schools that are actually utilizing you know
7 you know uh **courses online for their students to be able to access certain courses**
8 **that maybe they don't have enough students for.** So you know they they they hook the
9 student up with whatever course online. And so I see this that it opens up the possibility
10 for kids you know to actually be also **collaborating with people uh you know doing re**
11 **search or whatever anywhere. That it's not about what's surrounding them but you**
12 **know so that it again opens up you know the possibilities tremendously.** (Interview, March 4, 2015)

Here, Lisa first noted the expanded access to information that technology offered students and teachers through digital libraries (line 1). She also highlighted access to additional resources, like online courses (line 7) as well as access to additional people through online collaborations (line 10). In positioning digital technology as facilitating student and teacher access to information, resources, and collaborations, Lisa reproduced several of the discourses we have seen in the survey and in the literature review. First, this positioning of technology ties into the technology-as-benefit discourse seen in both the survey and in Chapter 1: positioning technology as a boon for learning (Richtel, 2010; Taylor, 2012), supporting and benefiting cognitive development. In addition, seeing technology as a way to access information also ties into the agentive use of technology as a tool, in contrast to its use as a tutor or as a medium (Kern, 2011).

Overall, we can interpret a generally positive orientation to this access discourse: Lisa described this access through the repeated use of phrases such as "possibilities" (line 5, 9, 12) and "open up" (line 4, 12); this suggests a positive valence attached to this expanded access via digital technology. That said, Lisa's reference in line 4 to the impact of this technology—it "changed the world" —might shift our understanding slightly: alongside or underneath "possibility" was a nod to the radical transformation of society that has taken place as a result of

the rapid pace of digital technology innovation. Here again, then, we might see a sense of change, of shifting norms and ways of being in the world.

Indeed, despite these acknowledged advantages of technology as well as its cited importance, Lisa did not necessarily embrace technology; rather, she—and the school—took what Lisa described as a "cautious" approach. Her concern centered on an understanding that "technology is very new. It's very very new. So we don't actually really have much research in the result of the use of technology" (Interview, March 4, 2015). Lisa elaborated on this stance, noting:

> What I **worry** about? Is simply that (1.5) we and maybe it's inevitable maybe it's just you know my lack of understanding. **But that we dive into it you know full-heartedly and don't necessarily uhmmm (1.0) examine the pros and cons** (1.5) you know with things. So I I I'm a person that rather takes a little bit more..from this point of view **a little bit more conservative**? to say "**let's move you know and let's do it but let's kinda do it systematically." Instead of just saying "we're diving into this and then we'll figure it out." (**Interview, March 4, 2015)

Here, Lisa first explicitly framed technology in terms of "worry" (line 1), voicing concern around the use of digital tools in schools. Lisa also underlined that this concern stemmed from the newness of technology and the perceived unknown impact of its use in education. As a result of this concern around these unknown impacts, Lisa described the investigative approach to technology that the school used, examining technology's advantages and disadvantages (line 3) before implementing it (lines 5-7).

A portion of this cautious approach to technology was rooted in finding "the developmentally appropriate way" of introducing technology:

> I think that for me the (2.0) the biggest you know yeah **shock** I guess is (.5) finding that new parents (1.0) in with the very best intentions mk? That uhm (1.5) one of the first things that they get their infant is an iPad. Or an iPhone. I mean 15 month olds that have their own iPad or their own iPhone. Uhm (1.0) where **people don't understand that children at that age cannot tell a three-dimensional object and a two-dimensional screen**. So **developmentally they're not ready for that. You know they need to be touching.** They need to be (1.0) discovering through their hands what the world is. (Interview, March 4, 2015)

The shock (line 1) that Lisa described here links into Montessori educational philosophy, writ large (see Chapter 2 for a more in-depth description of Montessori education). A central component to this approach stems from Maria Montessori's observations of children and the different stages at which they develop different levels of thinking (American Montessori Society, n.d.). Lisa referenced this developmental process as well as underscored how, within it, digital technology at a young age was inappropriate. By extension, Lisa alluded to the potential that digital technology, used inappropriately or introduced at an inappropriate time, could damage students' development and growth.

In addition to developmental stages, Lisa also indexed another component of a Montessori philosophy as well as the threat posed by technology in noting the importance of children physically interacting with the world (lines 6-7 above); this ties into the Montessori tenant that education be firmly rooted in the "real world": students need to be able to touch, feel,

and manipulate the world around them for learning to take place. The Assistant Head of School, Rosa, echoed Lisa's concerns on this score:

> Um I think [technology] gives a false idea to children of getting immediate results. I think it's v—we see that in children. They become very impatient if they have to wait for something. Because they are so accustomed to getting immediate gratification. **I feel that children need to experience in three dimensions what life is all about.** And I think it's **it's better for their executive function**. And their uh working memory and all the skills they need to get in order to **function as a human being. Not as a scholar or a student but as a human being**. (Interview, April 3, 2015)

On the one hand, in lines 3-4, Rosa corroborated the importance of a 3-D world and the physical manipulation of that world in education and in development more broadly within Montessori philosophy. She also described in detail the impact of this kind of learning environment: cognitive growth as well as growth as a human being (lines 5-6) hinged on this kind of learning and environment. On the other hand, Rosa juxtaposed technology (lines 1-3) with this ideal learning environment (lines 4-7), indicating that digital technologies were perceived as unable or poorly-suited to fostering this kind of learning. In other words, Rosa confirmed the importance of a particular learning environment to the Montessori philosophy as well as the threat that technology posed in encroaching on that environment.

We can link the concern expressed by both Rosa and Lisa to the historically-rooted technology-as-threat discourse—digital technology seen as a threat to cognitive development and learning (Carr, 2010; Richtel, 2010)—discussed in Chapter 1. This threat to learning and to development also arose in the survey to some extent, mostly in the balanced and responsible use discourse that was most prominent amongst teachers. That said, this discourse at TWFS took a context-specific form: seeing technology as a threat to the specific tenants of a Montessori learning philosophy. This helps to underscore that the threats perceived to be posed by digital technology take different forms based on specific educational environments; this nuances the discourses from the literature review and the survey findings as well as underscores a layer of complexity in line with the ecological approach taken in this dissertation.

In addition to and outside the Montessori-specific manifestations of this technology-as-threat discourse, Rosa also explicitly cited more general layers of the perceived threat from digital technology. For example, in lines 1-3 above, she lamented the impact of digital technology on patience and learning: expectations of getting immediate results and immediate gratification. Later on in the interview, she added:

> I get these advertisements about oh "program so and so will t—will raise the the level of your children in reading or in math and whatever." Really how? You know by putting **little games** and you know it was so hard for us to find a typing program uhm cuz **we want the children to learn how to keyboard without all these blo-whistles and all these cartoons** and all these things because what happens is that the children just want to play those games. They are not interested in the keyboarding at all. (Interview, April 3, 2015)

We can see here that Rosa saw educational technology platforms and programs, which incorporated features such as cartoons and games, as contrary to the learning process (lines 2-3). Moreover, these additional features made students insensitive to the learning taking place, focusing their attention elsewhere (lines 3-5). This potentially ties into several discourses seen in the survey and in literature review. First, this could be considered a part of the technology-as-

threat discourse seen previously amongst administrators, survey respondents (in the form of the balanced and responsible use discourse), and in the literature review, although without the Montessori-specific focus. Additionally, Rosa's rejection of these educational platforms and programs could also align with a rejection of a technology-as-tutor orientation to technology—using digital technologies to take on the role of the teacher (Kern, 2011). This complicates the Montessori-oriented technology-as-threat discourse seen above, illustrating that the same ultimate positioning of digital technology—technology-as-threat—could stem from multiple discourses.

Taken together, Rosa and Lisa most often positioned digital technology in terms of its threats—to learning, social development, and education in general. That said, they also asserted the continued importance of digital technology, largely in terms of its omnipresence but also, for Lisa, in terms of the increased access it provided. Looking at both TWFS administrators, then, we are left with a series of overlapping discourses that positioned digital technology in strikingly different ways within global education and in ways that would result in strikingly different understandings of global education: as an omnipresent necessity and as an auxiliary tool to support learning, but, at the same time, as a threat to Montessori learning philosophy as well as learning and growth more broadly.

Teachers. A similar set of contradictions marked TWFS teacher discourses. Like survey respondents and TWFS administrators, TWFS teachers also rooted the importance of technology within education in its perceived role in the present and future. Carlos, the Upper Elementary and Junior High Spanish teacher, for example, put the importance of technology in these terms:

> I cannot predict the future but I mean **if technology is involved in the way it has been** I **believe the future will be more will use more technology**. **Every day I mean it's new things. So I think maybe technology will you know will be an important thing in their future.** (Interview, March 4, 2015)

Carlos underscored the role of technology today (line 1) and its predicted role in the future (line 2, 4), as his colleagues Ella (Upper Elementary English teacher) and Anaïs (French teacher) did. This aligns with and corroborates the common omnipresence discourse seen in the survey and with TWFS administrators. In addition, Carlos's emphasis on the perceived pace of technological change—every day there are new technological innovations (line 3)—adds in a sense of how dramatic he perceived technological change to be. This echoes the rapid pace of technological change that was salient for many participants in the survey and the subsequent need to include technology in education in order to prepare students for that change.

Sophie, the Junior High teacher, also voiced a similar although also more complex discourse and positioning of digital technology when asked how she saw students using technology in the future:

> I think that most likely **in almost anything we do they'll be using technology**. Uhm I mean you can still find some **professions** that may be a lot more hands on but typically at the end of the day there's some report to generate there's some you know something to do that would-even if you're your own business person you know if you're selling something you're still gonna need to make use of these tools. Uhm I think that **we don't really know what we'll be dealing with technology wise in the future? But if you stick to sort of how do we use it and how can we learn to use it uhm I think that those are sort of the keys.** (Interview, February 17, 2015)

First, Sophie corroborated the general trend in teachers' understanding of technology toward an omnipresence discourse: the fact that technology will be "in almost anything we do" (line 1) in the future (line 6). Interestingly, Sophie's use of pronouns and verb tenses in the phrase "in almost anything we do they'll be using technology" also reflects and reinforces this omnipresence discourse. The use of "we" arguably references society in general, in the present. Given the question, the "they"' suggests a reference to students and situates student use of technology in the future through the future tense ("will"). In other words and in line with the omnipresence discourse, Sophie sees society in general as being conducted via digital technology in the future, a future that students will be engaged in and responsible to.

Second, Sophie's use of the phrase "we don't really know what we'll be dealing with technology-wise" (lines 5-6) could index the rapidity of technological change that we saw within the omnipresence discourse in the survey: the fast pace of technological development means that the technologies that students will be using and responsible for are also in flux. This precipitates the school's general strategy when it came to technology: without being able to predict what specific technological tools would be available down the road, a focus on how to use tools would most benefit students (lines 6-8).

We might also interpret a layer of uncertainty behind this strategy and its root: the perception that "we don't really know what we'll be dealing with technology-wise" (lines 5-6). As we saw in the survey, the omnipresence discourse could at times be punctuated with concern or anxiety in the face of technology's rapid change. Here, we might read concern in the face of perceived unknown technological landscape in the future (lines 5-6) as well as reluctant responsibility via the use of the phrase "dealing with" (line 6). In other words, Sophie may have seen digital technology as an unknown to bear down the road, aligning with the concern-laced positioning of digital technology in the survey.

An additional layer to Sophie's positioning of digital technology was also evidenced in the above quote, through a link between digital technology and the job market: technological skills were going to be necessary for all future jobs (lines 2-5). This is a reference to the importance of digital technology on the job market as well as a reproduction of an economic opportunity discourse, seen in the survey; it also aligns with a utilitarian technology discourse, seen in the literature review: linking digital technology to pragmatic, professional preparedness goals (Selwyn, 2011).

Interestingly, Sophie dealt with technology's omnipresence differently than her colleagues did. While there was a certain acceptance or even resignation around the projected role of technology by most teachers, administrators, and parents, Sophie firmly positioned technology as something under her control:

1 Sophie: I hear a lot and see a lot of schools that seem to (1) be onto the **bandwagon** that
2 any technology is good technology. And that the more we get the better it is.
3 Uhm (1.0) and it seems to me to be somewhat an indiscriminate process of just if
4 it's technology it must be good. And I profoundly disagree with that (laughs).
5 EH:[25] (laughs) Say more yes please.
6 Sophie: Uhm...I think that **technology has a role**. It has **an essential role** in all of our
7 lives nowadays. But I think **that it is a tool**. And **technology is something that**
8 **we should control and not something that is controlling us.**
(Interview, February 17, 2015)

[25] "EH" denotes the researcher and author.

First, we see here how Sophie confirmed technology's omnipresence today (lines 6-7). She also referenced what she saw to be the "bandwagon" or common approach to digital technology in schools—technology is good and more is better—and positioned her perception of digital technology in juxtaposition to that approach (lines 1-4). More specifically, she went on to clearly position technology as a tool (line 7) circumscribed within boundaries: technology was to be controlled by an agentive and empowered user, not the other way around (lines 7-8).

Sophie further illustrated this stance through a story:

Sophie: People often think it's funny I mean I **I use [technology] in my personal life as well**. I have a cell phone and uhm my father's eternally frustrated because **I don't answer it**. And partly I don't answer it because it's on the silent mode most often because I'm a classroom teacher
EH: Yeah can't have phone ringing in the middle of class.
Sophie: But the other part of it is that (1.0) **I answer my phone when it's convenient to me. The phone is my tool. Not not someone else's you know. It is there for my convenience, it is there for my use.** (Interview, February 17, 2015)

Here, Sophie acknowledged that she used digital technology in her personal life (line 1); she had a cell phone, for example, and she took advantage of advances in eReaders to support her son's reading skills (Interview, February 17, 2015). But she also clearly delineated its role in her life: technology was a tool under her power, at her disposal when she was ready (lines 6-8). All in all, then, while Sophie reproduced an omnipresence technology discourse, she also squarely worked to regain a sense of control and agency in the face of that omnipresence and its accompanying uncertainty: technology, while everywhere and changing rapidly, worked for her, not the other way around. This positioning links strongly into the instrumentalism technology discourse cited in Chapter 1: Sophie forcefully rejected technology as determining her or her students' behavior; rather, she aligned with and reproduced an instrumental technology discourse in which technology was under her control.

Teachers at TWFS, including Sophie, also perceived technology's role in more targeted ways. One story was shared multiple times by both administrators (Lisa, Head of School) and teachers (Sophie, Ella) to illustrate how technology was understood and used at the school: the previous year, the Junior High students had been redesigning their classroom space. Right before the proposal was due to Lisa, Sophie discovered a web-based program for floor design and planning. She presented it to the students, one of whom had had a very ambivalent relationship with digital technology up until that point. Sophie described what happened next:

[The student] was totally anti-technology and 11 o'clock at night I get an email from her. "This is what I have so far." And she's built the classroom and like it's almost all in place. Um and that's I think you know one of the things that that I see it's like there's **she saw a need she had a desire**. And so **she went and she figured it out**. Uhm. And I think that's a characteristic across the board but that is shared with our approach to technology. (Group Interview, March 19, 2015)

At the core of this story was an approach to technology that was need-based (lines 3-4): when there was a need or problem to be solved, technology acted as a tool to fill the gap and offer a solution. Sophie summarized this as technology as "a tool to better their understanding" and to get their needs met.

In keeping with how Lisa framed technology as a tool, teachers cited one primary way in which technology was used in this way: through enhanced access to information. Ella explained:

> **But we do uh use a lot of technology a lot of computers and Internet research** for things like...uhm studying global effects of things or looking at looking for really current information on things. The UN work asked them to look for current relations of the country that they were studying with other countries. Or actual things that are happening right now. So books can't help them with that. (Interview, March 11, 2015)

Ella pointed out here how the school used digital technology as a way to access information for different research projects (line 1). She also specified the kind of information that digital technology was used to access: current or up-to-date information (lines 2-4). This positioned technology as a way to extend what could be found in books (lines 4-5): when books did not have the targeted information, the Internet became a suitable or appropriate resource.

Technology was also seen as a tool to support students with learning differences. Sophie noted that:

> We see that definitely kids who for whom **technology is an incredible tool**. That it allows them to **move past certain difficulties they have**. You know there's some kids for whom writing by hand is incredibly painful. And that having an alternative means of expressing themselves can be really really helpful cuz the ideas are there. (Interview, February 17, 2015)

Ella elaborated on this, contextualizing this understanding within the larger Montessori philosophy of learning:

> We really try and give kids a **really hands-on experience** and so for us uhm...use using **technology when necessary**. So we have we have **several students with learning differences** in this classroom several dyslexic children and so they bring a laptop to school and they use the laptop which helps them or children with dysgraphia the you know can't make the words as quickly as their mind is going. Uhm and so **that's been really helpful because it yeah it makes it so that they can express what's really inside of them before they get so frustrated trying to write it down.** (Interview, March 11, 2015)

We can see a few things in these two quotes. In the first quote, Sophie summarized one of the primary roles of technology at the school: an "incredible" tool for students with learning differences (line 1). In the second quote, Ella indexed the larger school philosophy around technology when necessary (line 6) as well as pointed to the cornerstone of Montessori philosophy in physical, hands-on learning (line 5). Within that context, she underlined how technology was positioned as a tool to help students who struggled to read or write or to express themselves (lines 9-11). As a whole, then, teacher discussions of technology suggest an overall positioning of digital technology as an auxiliary tool to support learning, to be used when the need arose. This aligns with both the technology-as-tool (Kern, 2011) as well as the technology-as-benefit to learning discourse seen in the survey as well as in the literature (Richtel, 2010; Taylor, 2012). Furthermore, the in-depth portrait of administrators and teachers at TWFS illustrates the context-specific manifestation of these discourses: in line with the school's

Montessori approach, technology was positioned as an auxiliary support tool and never to the detriment of the larger educational philosophy.

One teacher, Carlos, differed slightly in his understanding of technology as a tool to support learning: in addition to being a tool for research and to support learning differences, technology for Carlos also supported learning by enhancing student engagement and fun:

> I've seen that [students] kinda enjoy [digital technologies like online videos, songs] I mean from my part it's trying to make it more interesting cuz **I know learning a language is not the most exciting thing.** Uh or at least for me so I always try to do something that they kinda say "ah I kinda wanna that looks interesting." (Interview, March 4, 2015)

Carlos pointed to a few things here: first, he noted the challenges described in Chapter 4 in terms of getting students interested in language learning (line 2). He then pointed to digital technology as a way to make learning more enjoyable (line 1) and interesting (lines 2-4). In contrast to other TWFS teachers and certainly in contrast to the Assistant Head of School, Rosa, Carlos understood technology as a tool to support student learning, yes, but through its engaging properties.

While Carlos stood apart from his colleagues in how he understood technology's benefit to learning, the influence of Montessori as well as the school's technology discourse was also evident:

> EH: How do you guys [teachers] think about technology?
> Carlos: **Well personally I think that technology's ok but after a certain age. Especially in like our Elementary program we tend not to use a lot of technology** but I mean you know **we** use technology. There was even a couple years ago they started to give Kindles to the UE students if they could you know benefit from having more books online, reading. Um **we** tried that but it hasn't worked out well because they're still children and then they didn't want we didn't want to give access to Internet. Uh but that's a whole other thing**. And I think the UE level uh we also want them to be outside and everything like we do cuz that's the school. You know try to have the children with nature and be outside. Explore. Use less technology. But there's always something. So you use it.** (Interview, March 4, 2015)

On a macro level, we can first see that Carlos voiced TWFS's primary orientation to education and technology: its use at the right age (lines 2-3) and not at the expense of 3-D and social learning (lines 8-11), illustrating that he also aligned with the technology discourses reproduced by his fellow teachers and administrators. On a more micro level, we can also gain insight into the relationship between Carlos's understanding of technology and the school's. On the one hand, Carlos cited here the school and the larger Montessori philosophy about technology from a personal perspective: he used the pronoun "I" (line 2, 8) to note the importance of developmentally-appropriate age (line 2) and of students exploring their physical environment (lines 8-11); this would suggest that, at times, he took ownership over this discourse, voicing it and appropriating it as his own. On the other hand, though, the majority of the excerpt is marked by the use of "we" (lines 3-9) to discuss this philosophy; this indexes a group adherence as well as a group mentality, rather than a personal one, and suggests that Carlos's reproduction of this discourse was not always his own but stemmed from the larger group's influence.

Indeed, Carlos himself was aware of the influence that the school's discourse had had on him. At the end of our second interview, I asked him whether or not there were technologies that he wished he could use more or less of. He responded:

> Well I guess just the..let's see. (3.0). **Well I guess before my if you if you would have asked me before probably I would have said yes uh I'm all about you know computers in the classroom. But I guess after my training and being in a Montessori school it's kinda more (1.5) I think I don't want more technology in the UE level.** (Interview, May 27, 2015)

Here, Carlos explicitly pointed to the role of Montessori training in shifting his perspective on technology: he had advocated for its use before coming to the school (lines 2-3), a stance that changed as he had been socialized into the Montessori method and discourse that characterized the trainings as well as TWFS itself (line 3). This underscores how the school's dominant discourses and positioning of technology influenced teachers there; that said, Carlos did maintain some of his previous understanding of technology, continuing to position it as an engaging addition to learning in contrast to his colleagues. This suggests a few things in relation to ecological theory: first, higher-level systems—the school and the larger Montessori community—did influence lower-level systems—teachers. Second, however, this influence was more than a simple and straight-forward reproduction: teachers maintained elements of past influential discourses, articulated and displayed in complex ways, in line with ecological theorizations of discourse. This underscores the complexity, non-linearity, as well as agency in positionings of digital technology at The World First School. Moreover, it suggests complexity, group as well as institutional influence, and the potential for agency in resulting understandings of global education at The World First School.

While teachers, including Carlos, certainly articulated a role for technology in learning, they reproduced discourses of technology-as-threat more than they reproduced discourses of technology's benefit. Similar to administrators, for example, teachers also saw technology as a threat to the Montessori tenants of learning, as Sophie explained:

> Our classrooms in the Elementary are built around the idea of **helping students to discover the limits of their environment so that they're pushed to go out**. We want them to go out to have **contact with the real world**. To learn how to talk to people to learn where you can find things in the real world to **practice social skills**. And to practice that while they're learning and if...**if you provide all of the information that they need which the Internet does there's no reason to ever leave**. You don't ever need to leave your classroom. You don't ever need to go out and face the real world. But then you've lost this whole (1.5) task if you will that's developmentally appropriate and important at that age. **You know because you you have this wonderful thing the Internet that can give 'em all the answers and so they're actually losing out on these other things that help develop who they are.** (Interview, February 17, 2015)

Here Sophie underscored the need for students to interact physically with their environment (lines 1-3), so central to the Montessori philosophy as described by administrators Rosa and Lisa. She also pointed to a very particular perceived relationship between social skills and those real world interactions (line 4): social learning took place while interacting face-to-face with others; this description indicated that interactions via other means or mediums would not produce

similar results and, therefore, that online interactions would not lead to the same kind of learning. In addition, the Internet impeded this face-to-face interaction necessary to developing social skills given its ability to provide access to resources without leaving the confines of the classroom (lines 5-7). In other words, the Internet threatened a central pathway to social development within a Montessori frame in multiple ways.

In addition to threatening social learning, online research tools were also seen to threaten hands-on learning as it is understood in Montessori philosophy. For example, after highlighting the ways in which technology can help students with learning differences, Ella lamented its impact:

> But it also makes me very like "you need to be also practicing ways so while you're producing your work and you're producing more work that's beautiful." **How can you also develop this slower skill that maybe is more mechanical?** Uh whatever. That that other part. You know the **handwriting still has to be done because you won't always have a computer**. Uhm this year we're doing more like really basic spelling quizzes and things like that which I think...you know that's not technology but I think that **for kids being able to spell is sort of flying away because you have autocorrect on your phone and on your computer and...spelling is important.** (Interview, June 11, 2015)

Ella indexed here a desire to return to or maintain slower, more traditional means of learning and being in the world, such as handwritten communication (lines 2-3). Although she first diverted blame away from technology (line 6), Ella ultimately pointed to it (e.g., autocorrect) as impacting students' ability to spell through autocorrect (lines 6-8). Interestingly, this excerpt also indexes a particular understanding of technology as well: literacy and spelling are also technologies, illustrating that Ella's understanding of technology to be more focused on the digital and that the threat to learning she described focused more on digital technologies rather than technologies themselves.

In a similar vein, Anaïs underscored what she saw to be lost in using technology—specifically the Internet—for online research:

> It's easier to use the Internet and to search for words. And the searches are done by someone else. Because searching paper, you have to already search for words, titles, or key words from the author. On the Internet, everything is already done. Pre-done. And the fact that the Internet you can't turn pages. There are students who are reluctant to turn pages. And when they have—we work with them and they start to turn the pages they discover other things. (Interview, May 29, 2015)

Here Anaïs drew attention to the fact that online research is easy (line 1): searches are done automatically and "pre-done," done by someone else (line 3). For her, this eliminated the need to select the appropriate key words and the need to physically turn to subsequent pages and the discoveries therein (lines 2-3, 4-6). Technologies like the Internet, then, kept students from physical and intellectual discovery, further threatening their development and learning. Anaïs, Ella, and Sophie, then, also reproduced a technology-as-threat discourse seen in Chapter 1 and in the survey, further illustrating how this discourse manifested in the TWFS environment and how teachers positioned technology at TWFS.

Embodied discourses. As a whole, teachers and administrators articulated a similar set of technology discourses: while acknowledged to be of vital importance as a need-based tool to

support learning, and especially among vulnerable learners, technology was largely positioned as a threat to learning as it is conceived from a Montessori perspective.

These articulated technology discourses were largely reflected in day-to-day standard practice at the school: overall, technology's use remained circumscribed within an auxiliary role that expanded with students' age. This came across in observations of classroom interactions, the physical and material classroom spaces, and the overarching rules for these spaces. In the Upper Elementary classroom, there was only one class computer, but the walls were lined with bookshelves, cabinets, and cupboards holding books and other print- and 3-D based educational materials; as will be corroborated below, this suggested an emphasis on non-digital technologies in the Upper Elementary classroom. There was also a woven bin beneath the computer that held the class's set of Alpha Smarts, a handheld device used to do word processing and to practice typing; here, we can see that learning to type was considered an important skill and one to be honed in the Upper Elementary classroom, but without any attached devices and platforms, such as computers or the Internet; this illustrates both the importance and caution around technology at TWFS. A few students had their own computers or other personal devices in the classroom, but these students had been given special permission to have them in class due to learning differences (Field note, April 3, 2015); this corroborates the articulated support role of technology for students with learning differences articulated by teachers as well as the emphasis on non-digital technologies for the majority of students.

Intersecting with this physical space were important rules regarding how students were to use the different technologies available to them. Students were allowed 30 minutes on the shared school computer per day, unless they had special permission to have their own device in class (Interview, Ilana, May 7, 2015). These personal devices were to be used solely by the student in question, not by other classmates (Field note, April 3, 2015). Importantly, when doing research for different class projects, all students were asked to first consult books, encyclopedias, and dictionaries before resorting to the Internet (Field note, April 3, 2015). These rules reflected as well as constructed the circumscribed, auxiliary role that technology was given in the Upper Elementary classroom, re-orienting students toward other technologies (books, Montessori educational materials) in line with the physical, 3-D learning as well as developmental approach prescribed by the Montessori tradition.

Classroom interactions around digital technology often centered on these spaces and rules, further illustrating the way in which technology was positioned at TWFS. For example, in the Upper Elementary classroom, technology's role in access to resources and in learning differences came to the fore as one student group worked to secure a recipe for the following week's Wednesday lunch. I came across the group in the back room of the Upper Elementary classroom, where they were using James' computer to research recipes:

1	Student 1:	Guys lemon chicken's the best.
2	Alan:	Sara lemon chicken is one of our options.
	(French teacher Anaïs enters the back room)	
3	Anaïs:	[Student 1] *tu as du travail à faire, jeune homme. Anthony c'est dans la*
4		*pièce principale. Et à part à part Andy, James, et Cole, pour certaines*
5		*choses tu n'as pas à faire* [sic] *Internet avec celui ci*. [You have work to
6		do, young man. Anthony, it's in the main room. And a part from Andy,
7		James and Cole, for certain things you don't have Internet with this one.]
8	Alan:	*Mais ca c'est du* [sic] *cooking group.* [But this is of the cooking group]
9	Anaïs:	*Je comprends.* [I understand]

10	Alan:	Anybody else have a computer?
11	Silvia:	Nope.
12	Alan:	We're not allowed to use a computer.
13	Student 1:	Because none of use have one.
14	Anaïs:	*Excusez moi*. [Excuse me] //Alan: Well I have one but it's not
15		here//*James peut utiliser l'ordinateur. Andy peut utiliser l'ordinateur.
16		*Vous pouvez* [James can use the computer. Andy can use the computer.
17		You can]//Alan: so James can help us.//*Regardez s'il vous plaît il y a les*
18		*livres à la bibliothèque* [Look please there are books in the library].
19	Silvia:	Ok guys let's go to the b-library.
		(Audio recording and field note, April 3, 2015)

Much of teachers' stance toward technology—and the larger TWFS school policy toward technology—was represented here. First, we see that James was allowed a computer in class, unlike other students; this was in line with his learning differences and in line with teachers' and the school's understanding of technology as a tool to support learning differences. However, Anaïs's entrance and subsequent directives to students (lines 3-7) underscored that, unless designated this right by the school, computers and the Internet were not immediately allowed to students; she redirected them to the books in the library first (lines 17-18), in keeping with the school's valuation of book technologies over digital ones. Later on in the day, this same group of students did gather around the classroom's single student computer to continue searching for online recipes; however, they explained that the recipe they were looking for hadn't been in the books available to them, so they had secured permission to use the Internet to do research; this not only reflects the school's book vs. Internet policy, but the school's larger technology policy: it should be used cautiously, when the need presented itself, and not before.

In Junior High, physical spaces, rules, and observations also corroborated TWFS's larger positioning of digital technology. Similar to Upper Elementary, books also lined the Junior High classroom, as did different pieces of science equipment and Montessori math materials (Field note, March 11, 2015). There were two computers stations in the Junior High space, one of which was tucked into a small closet or inlet in the central meeting room (Field note, March 11, 2015). Unlike the Upper Elementary, however, Junior High students were also allowed to bring their own personal computers or tablets to class. While not all students took advantage of this rule, the majority did, making laptops and their use a more prominent feature of the Junior High classroom. The increase in the number of—as well as access to—computers in the Junior High space falls in line with the increased use of technology that came with age and development: Junior High students, having reached particular development and learning milestones, were able to use digital technologies more. In addition, the rules around consulting books first, seen in the Upper Elementary classroom, were relaxed at the Junior High level. As a whole, then, the space and rules in the Junior High classroom reflected the increased use of digital tools in learning that accompanied student growth and development in the Montessori tradition.

Over the course of the study, I only observed the language classes for Junior High. Therefore, I cannot comment on whether or not technology was more frequently used to present student material or used more centrally in learning more generally. In what I did see of the more general use of technology, Junior High students were allowed to use their computers freely to do research or complete assignments, in line with the more liberal use of technology at older grades/ages (Field note, May 12, 2015).

In language learning classes at the Junior High level, digital technologies were only used on one occasion to present students content or material over the course of the four-month observation period: in Carlos's advanced Spanish language course (a mix of Junior High and Upper Elementary students). In this instance, Carlos used a PowerPoint presentation to outline project expectations as well as to model a polished PowerPoint should look (Field note, April 28, 2015). The following describes the set up to the presentation:

> As Carlos set up, there were a few conversations. One was with Isaiah who talked about getting books online. There was an extended conversation then about ordering books on Amazon. This was largely in English; during this time, Carlos was setting up the projector. This was connected to his MacBook—likely a Pro. The projector was relatively old—the mobile kind that I used to use in 2010. It was taken out of a box labeled TWFS 1. The box was rather old and damaged looking. This was the first time I had seen the projector used. Carlos searched for an outlet. Clara motioned to the wall and said "*il y a*" [there is one] in reference to one. (Field note, April 28, 2015)

As we can see here, the use of technology in this space was infrequent. The projector itself was old, kept in a damaged box; this corroborates the reported infrequent use of digital technology in the school and suggests that not many financial resources were used on technology. Moreover, in looking for an outlet, Carlos indicated that he likely didn't know where the outlets were in the space, suggesting that he didn't often hook up the projector in that space and that the use of technology in this way was not typical. Interestingly, this use of digital technology did not align with Carlos's articulated discourse of technology in terms of student engagement; rather, this example ties more tightly into the use of technology to organize and facilitate classroom instruction (Ware & Hellmich, 2014), further complicating the technology discourses used to position digital technology at the school.

Taken together, teachers' embodied technology discourses largely matched their articulated technology discourses: digital technology was positioned as important but, seen as a threat to the Montessori learning tradition, it occupied a supporting role in learning. These discourses point to a developing trend at TWFS: a perceived essential role of technology in education today that collided with perceived threats to student learning. As we just saw, the school—administrators and teachers—largely dealt with these juxtaposed discourses by integrating technology into curricular offerings in a slow, measured way, adding it when there was an obvious need or purpose to the technology.

Parents. The way in which TWFS teachers and administrators positioned digital technology resembled the way in which TWFS parents talked about technology—their articulated technology discourses. For example, parents also cited a strong omnipresence discourse when it came to digital technology, as administrators and teachers did. James' mother Christie, for example, saw digital technology as a driving force of change to come in the future:

> It seems important to teach children at least some of the basics [of technology] because it's so **pervasive and I think it change—it's gonna change the way that we do everything.**

She added later on in the interview:

> So I think it's gonna totally change the way that we access information and we become experts and you know I don't know I **I think it's profound** and I think we **don't really**

6 **know where it's gonna go.** (Interview, May 26, 2015)

Like Rosa, Christie saw technology as a harbinger of change to come (lines 2, 3-4). Also like many of the study participants, Christie did not specify at first what areas technology would change; rather, it was a generic, blanket "everything we do" (lines 2-3), tying into the omnipresence discourse seen in the survey.

In addition, Christie's assertion that "we don't really know where it's going to go" ties into the layers of the omnipresence discourse seen in the survey. On a first level, this phrase could describe the rapid change of technology: given the pace of technological change, we don't know where or how technology—as well as the changes that it brings—about develop. On a second level, I would argue that we can also sense a level of uncertainty in Christie's projected future: the change she described would be deep or "profound" and unpredictable in its direction (lines 5-6). This interpretation would echo the uncertainty-laced manifestation of the omnipresence discourse seen in some survey respondents as well as with some teachers and administrators.

This uncertainty may also have been present in how Melanie—Silvia and Tyrell's mom— described the importance of digital technology:

1 Yeah it's very important not not just because my husband is an engineer [laughs]. Uhm
2 but you know **technology is in the here and now**. It's not it's no longer like the wave of
3 the future. **It's what it's what's needed uhm in order to stay abreast of what's going**
4 **on**. **Really in many different you know facets of the world**. Uhm **there's lots of**
5 **changes coming about** because of technology. Uhm but in terms of just the world
6 around us **I see technology everywhere**. (Interview, May 19, 2015)

Similar to Christie, Melanie described the importance of technology in education as rooted in its omnipresence today: it is "here and now," "everywhere" (line 2, 6). This use of "everywhere" echoes other study participants in its generality: the present and future use and impact of technology was not specific, but omnipresent, touching all aspects of our world.

We can also see some of the layers to this omnipresence discourse that arose in the survey. For example, Melanie's use of "stay abreast" as well as predicting "lots of changes coming" tie into an understanding of technology's rapid change in society today, prevalent amongst survey respondents as well as other TWFS school actors.

Finally, we might also dig deeper into the phrase "staying abreast" of technology. As was the case with phrases like "keeping up" seen in the survey, this phrase also suggests its opposite, the consequences of not learning about digital technology or including it in education: not being up to date, not being in the loop, not being current, not being relevant. In other words, we might link this phrasing and this positioning of digital technology into same manifestation of the omnipresence discourse that study participants indexed: the need for technology to survive or keep up in a future that is marked by change and uncertainty.

Beyond the omnipresence discourse, one TWFS parent also outlined more specific roles for technology in education. Christie, whose son James struggled with dyslexia, was vocal about the role of technology in supporting her son:

1 Since James is dyslexic, he uh his one of his problems is with the actual physical writing.
2 So uhm we uh got him a **laptop** actually got my husband's old laptop we didn't get him a
3 laptop. He got my husband's old laptop. And **we put the Dragonspeak dictation soft-**
4 **ware on there** and started working with with with the dictation software and supporting

him in doing some basic typing programs…. And I think you know it's a challenge as a parent where like he's got this huge mind I mean he really does. He's very creative very smart. He's got a lot to say. And if you read what came out on a piece of paper, it's really sad. And he **there's so much struggle there**. **So technology has been really important to him to just start to bring those closer together.** (Interview, May 26, 2015)

Christie described in detail how technology—a laptop and advanced dictation software (lines 2-3)—played a role in James' learning differences: supporting his writing, for example, and bridging the gap between what he wanted to communicate and what he could communicate (lines 6-9). These tools, in other words, were essential in his learning. This aligned with both the general technology-as-benefit to learning discourse seen in Chapter 1 as well as the specific manifestation of this discourse in relation to learning differences seen with TWFS teachers.

Two TWFS parents also referenced the use of technology in jobs. For example, when talking about the importance of technology in education today, Melanie noted:

And you know **I use technology all day at work**. We all do I mean for the most part. So and even you know where my husband is working now he's a contractor for a company called [company name] and they are the office software company for the largest libraries in the world. So you it's a library company but it's a software company. (Interview, May 19, 2015)

Melanie positioned technology here as central to her own daily work (line 1); in doing so, she also linked technology's importance in school today to the future job market that students will face, aligning with both survey parent respondents, who most often situated technology in terms of economic opportunity, and, subsequently, the economic manifestation of a utilitarian technology discourse (Selwyn, 2011).

Similarly, Christie highlighted the role of technology in her workplace when discussing the importance of technology in education:

I'm kind of on the fence. I mean...I think if you don't expose [students] to some then uhm I guess some kind of concern where I am which is it's such a **foreign concept**. I can't turn on the-I can't turn on the uhm stereo. I can't I mean there's all sorts of crap I can't do. And uhm you know I work in a uhm..**I'm a director at an organization so when I have a problem with a computer I just ask my assistant.** And uh [my husband] loves technology and is very into it so if I have a problem at home I just ask [him] so I don't know anything about it. And I sometimes feel a little bit uhm..**limited by that**? (Interview, May 26, 2015)

First, like Melanie, Christie referenced her own use of technology at work when discussing the importance of technology in education today (lines 4-5), making indirect but nonetheless clear links between digital technology, education, and the job market; again, this points to the reproduction of an economic opportunity seen throughout the study as well as the utilitarian discourse seen in the literature review. More than that, though, Christie situated the importance of technology in jobs within a larger frame: avoiding a potential deficit in the face of the "foreign" nature of technology (line 2). We might interpret this as an additional indication of the perception that students would be in the dark, left behind, or "limited" (line 7) without some technological education, unable to complete tasks or handle issues in both professional and personal spheres on their own as Christie had experienced.

Despite these acknowledged and articulated roles of technology on the job market as well as in supporting learning, parent participants at TWFS also reproduced a strong technology-as-threat discourse, similar to that seen with TWFS administrators and teachers. Melanie, for example, indexed the overarching Montessori philosophy and the resulting threat to learning that technology presented:

> But I believe that from the standpoint of Montessori education Montessori philosophy they try **not to introduce [technology] too early** on because of there's a whole um factor in terms of children being able to understand you know what they're doing on the computer versus **what they're doing you know with their hands and using the materials and so forth so they don't want to interfere with that learning process.** (Interview, May 19, 2015)

What comes across here is the Montessori emphasis on a developmentally-appropriate age (line 2) and the importance of learning physical interaction with materials (lines 4-5), both of which can be interrupted by early or improper use of technology. Interestingly, though, Melanie's use of "they" throughout this excerpt gives some indication that the philosophy she described was separate from her own; the "they" arguably refers to Montessorians as well as possibly to the school itself. As an employee of the school (see Chapter 2 for a description of Melanie's job as the school's Community Relations Director), Melanie was, on the one hand, a representative of the school in the interview, which may have prompted her to voice the school's primary technology discourse; on the other hand, the use of a distancing pronoun also separates Melanie from the school, creating space between her and the discourse. It is unclear, then, if the Montessori-based technology-as-threat discourse was fully reproduced by Melanie. Indeed, this becomes a particularly salient question when considering other indications of Melanie and her family's "pro-technology" attitude (Interview, May 19, 2015), such as the fact that Melanie's husband worked for a software company and brought home coding-based games for the kids to learn. This again points to the nuance that resides within articulated discourses: while Melanie may have reproduced a technology-as-threat discourse, it may not have fully represented her views of technology or how she ultimately positioned it in her understanding of a global education.[26]

Christie also had significant reservations about the threat of technology in education. For example, despite its role in supporting James with his dyslexia, Christie described herself as "on the fence" in terms of the importance of technology in education. A primary concern was social:

> So I kinda feel like technology is like that. Like you wanna give 'em **enough** understanding that they get it. And they can go there if they choose? **But I don't want 'em to just sit around and code.** (As she said this, Christie scrunched her body over the table, head down, and made as if she was furiously typing, arms crunched up to her chest.) Cuz that's....(she swept her arm out away from her and toward the window, presumably gesturing to the wide world) you know? And and I don't want 'em to live like that. Live like as much as possible and as much as appropriate—to you and your health **you gotta be outside**. Uh you know **you have to be doing all sorts of things.** (Interview, May 26, 2015)

[26] This kind of analysis also applies to comments made by all participants and will be discussed in the limitations section of the final chapter.

Here, we see that Christie's desire to include technology as a part of her sons' education was tempered: "enough" (line 1) technology to make them confident and competent, but beyond that threshold were serious risks, embodied by Christie herself in lines 3-4; her body language and accompanying references to "coding" and "sitting around" (lines 2-3) indexed stereotypical hacker or gamer behavior, characterized by a laser-like focus on a computer platform or game as well as rejection of traditional social interaction and physical activity. These risks were further confirmed by her juxtaposition of this hacker/coder status with the sweeping gesture to the window (lines 5-6), indexing the outside world, health, and activity (lines 7-8). Christie, then, wanted technology in education today but not enough to threaten a social, healthy, active engagement with the outside world.

While social learning and interaction with the physical world was certainly a tenant of Montessori philosophy, the way in which Christie indexed it did not fully align with the Montessori discourse seen earlier. For example, Christie did not tightly link child development and learning to physical manipulation of their environments in the same way that teachers and administrators did. Rather, her discussion of social interaction was positioned more in terms of friends, health, and activity. In other words, while Christie and teachers/administrators at the school reproduced a general technology-as-threat to social development discourse, the root of these discourses differed.

Similarly, another more general discourse of technology's threat potential was also brought up by Marco, Anthony and Isaiah's father. Indeed, Marco almost exclusively understood technology in terms of threat, setting him apart from the other parents who articulated a more mixed understanding. For Marco, digital technology did not lead to the "deep understanding" that he wanted for his boys. He illustrated this through the metaphor of a McLaren clutch:

Marco: And that would be like repairing a clutch you know like a McLaren clutch costs $50,000 to repair, right? It's it's a beautiful car from what I understand. **But you have to repair the clutch you have to take it apart. You have to understand what it does, where it goes, how it fits in and all this.** And that's all great but you know the things I want 'em to learn: **truth beauty love understanding humanity**. Uh and then you know then they get older yeah. Yeah. I repair a clutch for a living, right? $50,000 but I make a good living but you you know when you're a young kid I want them to understand you know=

EH: =Yeah these different, more=

Marco: =Right right **love of humanity**, you know what I mean? (laughs) right? Cuz then you know the next thing I know **they're repairing drones and dropping it on people** (laughs) you know?

EH: For example.

Marco: Right right. **Technology can be bad. Right?**

(Interview, May 14, 2015)

There are several things to note in this admittedly complex metaphor. First, Marco underscored the detailed knowledge and complex skills needed to navigate the inner-workings of a McLaren clutch (lines 2-4), highlighting the level of knowledge and skill needed to understand the McLaren's corollary, digital technology. He pointed out, though, that what he really wanted his boys to learn—"truth beauty love understanding humanity" (lines 5-6) as well as "love of humanity" (line 10) — were not involved in this technical work through the juxtaposition preposition "but" in line 4. In other words, while fixing a McLaren clutch or working with digital technology could earn a good salary (lines 6-7), it did not teach students these higher principles.

Furthermore, without these higher principles, students, according to Marco, were at risk for engaging in immoral or unethical behavior, such as dropping bombs on innocent people via drones (lines 11-12). Succinctly, for Marco, "technology can be bad" (line 14).

The threat that Marco perceived to be posed by technology did not stop at these higher principles. In addition to threatening higher-level learning, technology also threated children's safety. This threat primarily manifested through social media. For example, Marco described fears of the "bullying that goes on [social media]. And the negativity. They don't know just how evil people can be. Or how exploitive they can get."

Social media was also ripe with opportunities for inappropriate sharing or interaction. For example, Marco described young tweens meeting and hanging out with 18 year-olds via Facebook or about young women using Twitter to describe their sex lives to the world. "They just don't know" the consequences of their actions online, he put it simply (Interview, May 14, 2015). Marco, then, reproduced almost exclusively a technology-as-threat discourse: a threat to learning what really mattered as well as to physical, emotional, and social safety. Similar to Christie, this threat discourse did not totally align with the threat perceived by TWFS teachers and administrators; for Marco, the threat posed by digital technology did not stem from a threat to Montessori philosophy, per say, but more generally.

As a whole, then, parents at TWFS shared an articulated technology-as-threat discourse; at the same time, Melanie and Christie also saw an important role for technology, supporting learning differences, bolstering skills for the job market, and preparing for unknown futures. In addition, the parents of TWFS help illustrate several nuances to discourse from an ecological approach. First, parents (particularly Marco and Christie) positioned technology as a threat, although the discourse that drove that positioning differed from the one that teachers/administrators used. Second, the discourses voiced or articulated may not have always been fully representative of an individual's beliefs, as evidenced by Melanie; this highlights the complexity of discourse from an ecological perspective as well as the importance of an ecological approach, needed to reveal these nuances.

Embodied discourses. Similar to TWFS teachers and administrators, then, TWFS parents saw technology as both important in education, given its omnipresence, but also as a potential threat. Interestingly, however, this juxtaposition between an articulated sense of technology's omnipresence and its threats produced a different reaction for TWFS parents than it did for teachers and administrators. Christie, for example, was quite vocal about her as well as other families' dissatisfaction with how much technology TWFS used:

> [Many of our friends at the school have left] from frustrations cuz basically **they can't connect**. **The school doesn't the school could use technology to distribute information and it does not**. It does not. So that's a big miss. That that part of technology. In terms of the kids learning you know they have the robotics class which was awesome afterschool. **And uhm you know uh I think that they could have more classes like that.** Since James is dyslexic, he uh his one of his problems is with the actual physical writing. So uhm we uh got him a laptop actually got my husbands old laptop we didn't get him a laptop. He got my husband's old laptop. And we put the dragonspeak dictation software on there and started working with with with the dictation software and supporting him in doing some basic typing programs…. And I think you know it's a challenge as a parent where like he's got this huge mind I mean he really does. He's very creative very smart. He's got a lot to say. And if you read what came out on a piece of paper, it's really sad. And he there's so much struggle there. So technology has been really important to him to just start to bring those closer together. And they're not there yet but they used to be like

here and this is starting to come up but it's still a huge level of frustration. **So technology's been important, but it's been us who we've done it all I mean they haven't they haven't done shit**. (Interview, May 26, 2015)

Christie's critique of TWFS's attitude toward technology was multilayered. First, she noted that families felt disconnected from the school and from what their children were doing in class (lines 1-3), pointing to a shared desire to have more connection and information via technology to the daily goings-on of the school. Second, she underscored a desire for more opportunities for students to learn about technology at the school (lines 4-5), despite her voiced concerns. Thirdly, Christie importantly contextualized the role of technology in James' learning differences, cited earlier (lines 6-14): she placed the responsibility and credit for implementing that support with the family, not with the school; indeed, contrary to what teachers and administrators articulated, the school was positioned by Christie as having done "shit" in this process (lines 15-17). All in all, Christie made clear that, when it came to technology, the school was not implementing or integrating it enough from a parental perspective.

Christie's critique was tempered by an acknowledgement that the school was "going through growing pains" around technology. She pointed out that:

When we started school in 2005 (1.0) [TWFS] had 8 kids in Elementary. The entire Elementary program. That's it. They didn't have an Upper Elementary they didn't have a Junior High. They had 8 kids in Elementary. That's it. So when you get perspective on what's happening with the school you have to understand **I think it's important to understand that they're doing all this for the first time.** So they haven't had to deal with technology before because they had these little kids and you don't have to teach technology to 3-6 year olds. (Interview, May 26, 2015)

Perceptively, Christie underscored how the school's development to include an Upper Elementary and a Junior High had propelled them into new territory (lines 4-5), territory that now and increasingly required technology in the curriculum. In addition, this also provides important background for the different technology discourses that teachers and administrators at TWFS articulated and embodied, contextualizing and to some extent explaining the threat-based discourses so prevalent amongst them: the technology-as-threat discourse stems not only from a Montessori approach but also from the extension of a Montessori approach to new ages and grade levels.

That said, Christie remained a vocal advocate for more technology at TWFS, a position that Lisa and Ella corroborated to be the case for many parents. Ella, for example, described parents and technology this way:

I think our parents are very much on the cusp. **They believe in the Montessori philosophy though they also really believe that students should use computers a lot**. And I think that that's what **comes from the public education? The use of computer**. So we try and orient the children to be able to use them proficiently but that's not the only thing they can do. Uhm and a lot-you know parents try-**parents use a lot of computers and tablets for practice in math**. You see a lot of things for like Kahn Academy. Or IXL or these other things. And as a Montessori those are very challenging for us because it can um hinder their ability to really get a deep understanding of a concept. (Interview, March 11, 2015)

Ella first pointed to juxtaposed parental attitudes about technology: belief in Montessori philosophy—and thereby a hesitation around the use of technology—and a desire that students use technologies like computers "a lot" (lines 1-2); this was corroborated by the juxtaposed discourses found among TWFS parents. As was the case with second/foreign language, Ella helps paint an empathetic, complex, and divided portrait of parents who reproduced conflicting discourses and positionings of digital technology as they tried to juggle competing influences, pressures, and fears.

A final thing to note: Ella underlined to what end parents often encouraged their students to use technology: for math practice (lines 5-6). While for Ella this represented a hindrance to the 3-D learning of mathematical concepts within the Montessori tradition, it also stands as an interesting link to Chapter 4: language learning was often sacrificed by parents when subjects perceived as more important, such as math, were threatened. This excerpt now points to how technology was leveraged to support math learning, suggesting two things: first, once again, certain subjects were more highly valued by parents; second, through embodied discourses, parents also positioned technology as a tutor, directly supporting student learning by taking on the role of the teacher. From this perspective, technology was valued by parents because it helped support the most valuable subjects.

Lisa, the Head of School, confirmed parental desires for more technology, adding in more contextualization of why that might be the case:

> I think that parents some [parents] are comfortable some of them would want uh **even more technology.** Uh because it's all around us and **they're concerned that their children might not have that edge of you know working knowing how to work with the technology.** (Interview, March 4, 2015)

This concern around an "edge" indexes an understanding of technology itself as carrying a high value on future competitive markets, such as the job market or the higher education market. This, in combination with Ella's comments above, suggests that parental desires and actions to include more technology in education could have been reproductions of a general utilitarian technology discourse: technology was seen both as highly valued on future higher education and job markets as well as a tool to support other subjects, like math, with equally high market values.

Taken as a whole, parental actions indicate that the threat that technology represented for many parents could be overridden: the perceived importance of technology superseded the potential threats of technology to student learning and development. This points to a large gap between the school and parents: while teachers, administrators, and parents often shared understandings of what technology was as well as its role (e.g., its importance in education due to its omnipresence, its support role in learning, and its threat to various aspects of learning and development), the school and parents as groups differed dramatically in terms of the perceived centrality of technology, the appropriate amount of technology in the school day, and its ultimate positioning in a global education: parents as a group tended to want more and the school as a group fought to keep technology circumscribed within particular parameters. This finding adds depth to the survey findings: while different school actors may articulate similar discourses of digital technology, as was the case with survey respondents, the ultimate positioning and role of this component in global education may be different in practice, further illustrating the complexity that accompanies ecological approaches to discourse.

Students. Students at TWFS articulated and embodied varied discourses of digital technology. Two Upper Elementary school students, Ilana and Sara, reproduced technology

discourses in line with those articulated and embodied by teachers and administrators. For example, Sara said the following about the importance of technology in education today:

> 1 Well I think that the more as you grow or **how like more that life like gets more high**
> 2 **tech** it's gonna be stuff like you're **gonna have to know how to use technology.** And
> 3 you're gonna have to know how computers work or how you should get to all this stuff
> 4 especially the older you get. (Interview, May 2, 2015)

Here, Sara made a nod to how life seems to be getting more "high tech" (line 1) and concluded a blanket need to know how to use technology (line 2). While not reproduced by other TWFS students, the omnipresence discourse seen in the survey and in TWFS adults responses was reproduced here by Sara. Moreover, the omnipresence discourse was very common amongst survey student respondents. This suggests that TWFS students, besides Sara, may have stood apart from their peers around the country in the reproduction of this discourse and in positioning digital technology within global education, although the younger age of TWFS students as well as the smaller TWFS sample may also have played a role here.

In addition to the omnipresence discourse, Sara strongly aligned with and reproduced the school's primary philosophy around technology and learning, as indicated by this excerpt from the end of our interview:

> 1 EH: Do you have any questions for me?
> 2 Sara: Well I think the only question I had which I asked you [before the interview re-
> 3 cording began] was how you were saying **education with technology** because at
> 4 the beginning I thought it was **really confusing** like I don't underst—**I didn't**
> 5 **understand how you would learn on technology.** (Interview, May 2, 2015)

Indeed, Sara had also started the interview with the same query, documented in a field note following the interview:

> [Sara] started off with a question for me—**how technology and education could fit together**. There is an interesting disconnect for her around the intersection of the two. She repeated this at the end of the interview. Some **hesitation** around technology—not knowing much about it, how to use it, etc, characterized our interview. (Field note, May 2, 2015)

What Sara expressed in these two queries was a fundamental struggle to see the relationship between technology and learning: putting the two together was confusing (line 4) and ultimately incomprehensible (lines 4-5). This attitude aligns with how teachers and administrators at the school ultimately viewed technology: not central to learning but, if anything, as an auxiliary tool to be used when necessary. This alignment could stem from a few possible relationships. For example, we could read this alignment as a coincidence, with Sara's understanding having no relationship to the understanding and discourses seen with adults at the school. We could also see Sara's attitude as resulting from the school's technology discourse and its translation in classroom practice: surrounded by an environment that did not forefront digital technology use—such as valorizing the use of books over the Internet or requiring final papers to be handwritten, rather than typed—, Sara came to understand technology as decoupled from education or learning. Sara's general hesitation concerning technology (line 8) could also have been a product of the technology discourse of the school: without having had experience using digital technology in her learning environment, Sara came to hesitate about it and its use. Given the

strength and pervasiveness of teacher and administrator discourses at the school, I would argue that Sara represents an example of a student reproducing the technology discourse of the school itself, illustrating the influence of the school on students and the discourses that they reproduced.

Sara's classmate, Ilana, also reflected and reproduced the primary technology discourse of the school. For example, she clearly laid out the pros and cons of books versus Internet resources along the same lines as the teachers:

Ilana: Books are **supposed to be the primary resource**. Although a bunch of people just use computers.
EH: Yeah? Why do they do that do you think?
Ilana: Uh because they don't want to go the trouble to actually get **information that's been edited. So that you know it's correct.**
EH: So do you like what do you prefer? Internet or books?
Ilana: Well..I like books but um if **I'm like if I can't find something in a book I use the computer.** But I do like computers a lot.
EH: What do you like about books?
Ilana: I like books because well **they're pretty reliable resources**. Uhm and they have a bunch of information in them.
(Interview, May 7, 2015)

First, Ilana here repeated the school stance that books are to be the "primary resource" (line 1), to be consulted before digital technology (lines 7-8). She also elaborated on why this was the case: books have more credibility because they have been edited (lines 4-5, 10-11). This attitude and the accompanying phrasing—"primary resource," "edited," and "reliable resources" —would not be typical of a 5th or 6th grader. This suggests two things: that Ilana was reproducing what she had heard, likely in the classroom environment; and that students were influenced by their school environment and the technology discourses that constituted that environment. In relation to ecological theory, this illustrates how higher organizational levels (teachers and administrators) influenced lower organizational levels (students).

Second, Ilana alluded to the fact that not all students at TWFS abided by the technology discourse and the resulting technology policy (lines 2-3). This, as well as Ilana's reproduction of the school's technology discourse, also came across during an open work period. The Upper Elementary students were working on a large project, to be presented to parents later that month, and I stumbled on a spontaneous discussion on the use of books versus Internet resources:

EH: Can I ask you a quick question to make sure I understand your thinking correctly. So you guys were saying that technology or Internet is....
Clark: Is better than books.
Silvia: Yes.
Ilana: **No!**
Daniel: Yes it is.
EH: What were the two arguments. So you were saying that=
Daniel: =Well the teachers say that that we should use books first and if we can't find anything in books we use the Internet.
EH: Ok. And what's good about the Internet?
Daniel: Well the Internet can give you much more resources.
EH: Ok but-
Ilana: **Ok books are um much more reliable because**////Daniel: this is a fun debate////Clark: That's actually true. ////**they have to go through a ton of levels of**

15 **editing.**
16 James: The CIA world fact book. That's online. And a book.
17 Ilana: **Well like that's a reliable website but a bunch of other websites are not.**
18 **Hackers—what?**
19 Clark: **And hackers what?**
20 Ilana: **And hackers can hack onto your stuff using the Internet.**
21 EH: Cuz you said the Internet was complicated, right?
22 Ilana: **And like the interweb of things or something. My dad talked about that but I think I fell asleep.**
(Audio recording and field note, April 8, 2015)

There is much to unpack here. Focusing first on Ilana, we see reproduction and defense of the school's book over Internet policy (lines 5, 13-15, 17). Again, Ilana's phrasing—"reliable," "editing,"—stand as beyond the typical vocabulary of a 6th grader and suggest the appropriation of words, phrases, and discourses from others. In this scenario and with knowledge of the school's technology policies and preferences, these are likely the words and discourses of the school itself, further illustrating the hierarchical influence of the school on students.

Ilana's reproduction of the school's technology discourse is juxtaposed with arguments from Clark (line 3), Daniel (line 6, 11), and James (line 15) on the merits of Internet-based research, articulated primarily as access to more resources. That said, Daniel did fully articulate and acknowledge the school's stance toward books and the Internet, neatly summarizing it in lines 8-9. While aware of the policy, Daniel ultimately went on to assume and reproduce different technology discourses, as we will see below. For now, we can see here how Ilana reproduced and defended the school's technology policy and discourse.

The above excerpt also points to another discourse that Ilana reproduced: safety online. In lines 17-18, she returned to the topic of hackers, one she had brought up earlier in the discussion. For Ilana, this was another reason to be wary of the Internet, citing the threat to personal information online. Importantly, in line 22, Ilana cited a source of this discourse: her father. This underscores that, alongside the technology discourses at the school, students like Ilana could also be influenced by the technology discourses at home; this pinpoints the multiple higher-level influences on students and their discourse reproduction.

Other students at TWFS also brought up the importance of online safety and security. For example, in an informal conversation, Andy, Alan, and Daniel too expressed elements of this discourse:

1 EH: What do you guys think is important about technology today? Is it something
2 important that kids need to learn about?
3 Andy: Well it can be kinda like **dangerous.**
4 EH: Yeah why dangerous?
5 Alan: Yeah.
6 Andy: Well there are things on the Internet there like there's like can be **Internet people**
7 **that like steal** that like send emails to you that are like random people and like
8 **stalk you.**
9 Daniel: And there are of course **things you don't wanna look at.**
(Audio recording and field note, May 19, 2015)

The danger inherent in the Internet (line 3) that Andy described took the form of stealing information, along the hacker lines that Ilana mentioned, as well as online stalking (lines 6-7).

Daniel also referenced "things you don't want to look at" (line 9), which presumably refers to online pornography. Like Ilana, then, other students at TWFS indexed an online safety discourse in their positioning of digital technology in global education. This discourse only appeared with Marco, Isaiah and Anthony's father, and not with other TWFS parents, teachers, or administrators. It was similarly absent from survey responses.

We can interpret this online safety discourse amongst students at TWFS in a few ways. First, we could link concerns about online safety to the more general concerns that undergirded the discourses reproduced by adults at TWFS and at survey schools. Second, given that it was brought up by several students at TWFS and yet not in the survey, we can wonder if this discourse was an additional part of TWFS's technology discourse, one of the ways in which teachers and administrators addressed technology at the school directly with students. This interpretation is corroborated by the particular language that students used: 6th graders would like not come to dangers such as stalking and information theft without outside influences.

As alluded to above and conversely to Ilana and Sara, Upper Elementary student Daniel approached technology differently, reproducing a technology discourse that contrasted with the primary ones found at the school. Daniel saw digital technology—and particularly the Internet—as an efficient and cheap way to access information, as evidenced in the following excerpt from an observation period:

EH: So how did you do your research? Did you do mostly books? Or mostly Internet or what?
Daniel: **Internet. I hardly used any books.**
EH: What was why'd you choose Internet over books?
Daniel: **It's a lot easier.**
EH: Yeah. Faster easier? or like-
Daniel: **Uh huh but I did it at my house so the teachers wouldn't catch me.**
EH: (laughs) That is fair. How do you know the websites like reliable and stuff?
Daniel: Uh well **Wikipedia is always true**. Other websites it says the same as Wikipedia so I follow Wikipedia. I never find any like weird information on there so like-
EH: And the teachers don't like that you-is it rather books?
Daniel: They **prefer that I look at books** and I do look at books but I look at them I don't exactly use them at all but yeah. Um and-
EH: What do you not like about the books?
Daniel: Just like the **books are good for general** for general or to get a book on Thailand like the one in Clark's cubby and you just look through it find interesting facts and write it down. Books are great for that. **But if you're looking for a more specific thing**. You should like what uh what um information on migrating groups in Thailand I had to study that. I'm just gonna use the Internet.
(Audio recording and field note, April 8, 2015)

In this excerpt, Daniel positioned himself largely in juxtaposition to the school's technology discourse: he embraced the ease with which he could access information via the Internet, preferring that to books (line 5). Given the school's firm policy with regard to books versus Internet, Daniel surreptitiously relied on the Internet for his schoolwork, accessing it within the safety of his own home (line 7). Admittedly, he did echo teacher discourses and school policy of the utility of books for general information (lines 15-17); this indicates that Daniel, although vocal about his opposition to the technology policy at the school, was likely influenced by it at the same time. Moreover, Daniel did not disagree with the heart of teachers' technology

discourse: technology, like the Internet, was seen as a tool to access information. What differed was the centrality of technology's role: Daniel saw and desired a central role and frequent use of technology within global education while the school did not.

While Ilana and Sara had arguably been influenced by the school's discourse, Daniel indexed a parental influence when it came to his stance toward technology: for example, he talked about watching his father and his fathers' friends, who did online sales and trading, use Facebook and other Internet applications in their professional lives. He also cited his father directly when talking about what technologies were most important to learn today and how he learned them: "My dad sells stuff online he sells knives and jewelry and flashlights and stuff online. So I learn about that from him a lot. I also learn how to Photoshop" (Audio recording and field note, April 8, 2015). Similar to Ilana, then, Daniel was reproducing discourses from his home environment at the same time that he was aware of and influenced by the ones at school; this further illustrates the complex ecological web that influenced students and their developing understanding of digital technology.

Daniel was not alone in his attitude toward technology, which was shared by many students at the school. For example, Clark emphasized the ease and cost of online resources: "Instead instead of going to a library or bookstore or buying something you can just go to the Internet and it doesn't cost any money." Similarly, Junior High student Isaiah cited the Internet as "more accessible:"

> Instead of trying to get books and everything I can just go on the Internet and get sources. As long as they're good sources. Not all sources are correct. So we have to watch out for that.

As we saw Daniel do earlier, Isaiah reproduced a technology discourse here that contrasts with the school (digital technologies as a preferred and efficient way to access information) as well as a discourse that aligns with the school (the need to verify the credibility of sources). Isaiah's discourse reproduction could point to two things: first, it could suggest the influence of the school's technology discourse on students, even those who stand in opposition to the school's technology policies. As we have seen throughout this section, students indicated influence from higher organizational levels (e.g., teachers, administrators, and parents) both explicitly and through their word choice. Second and simultaneously, it could also suggest that students were influenced by sources beyond the school and potentially beyond parents: Marco, Isaiah's father, did not articulate a view of digital technology in this way, suggesting that Isaiah may have been influenced by an additional source. This illustrates how students could be influenced by both their school and home environments as well as how they could draw influence from outside those circles. This stands in line with ecological theory, which acknowledges both the hierarchical and non-linear influences on discourse appropriation and reproduction—in other words, it acknowledges both the influence of higher organizational levels (e.g., teachers and administrators) on lower levels as well as the dynamic and unpredicted influences that come from other sources as well as that come when discourses interact (Kramsch, 2002; Larsen-Freeman, 2002) .

Embodied discourses. In looking at use of technology at TWFS, student actions suggested a desire to use and implement technology in a variety of situations, beyond those sanctioned by the school. For example, despite her reproduction of the school's technology discourse in interviews, Sara was observed to resort to technology in instances not sanctioned by teachers; for example, in the excerpt cited above around finding a recipe for cooking, Sara was a part of the group surreptitiously using the Internet to find recipes (Field note, April 3, 2015).

Moreover, Isaiah, Daniel, and Clark's behavior in the classroom aligned with their articulated discourses; for example, for their final Spanish presentation, students were only supposed to use one online source; however, Isaiah and Tyrell's final PowerPoint slide listed four sources, all of which were Internet sources, despite explicit conversations with teacher Carlos as well as other students on the one-source rule (Field note, June 2, 2015). This corroborates their articulated discourse of technology's central and important role in facilitating access to information.

Although there were certainly exceptions, this trend toward using more technology than was sanctioned by the school characterized both the Upper Elementary and the Junior High, as evidenced in the following field note excerpt:

> At the computer station near the kitchen, several students came to use it. One of the cooks verified something on the Internet related to the recipe. This interaction look place in English. This same interaction involved the use of the computer clock to time a part of the cooking process. Later, I saw a girl on the computer writing emails and then using Wikipedia.
>
> I heard some interesting things about technology while the students worked. Twice, Ella mentioned that the Internet should be used only after a book has been referenced. This happened both when a group was planning the meal for the following week and with one of the groups working on the fundamental human rights. She said "gentlemen, in this class, you use books first. You know that."
>
> (Field note, March 11, 2015)

This field note points to both the frequent, minor uses of technology by students as well as how teachers had to remind students of the school's technology policy. On the whole, then, while some did reproduce the school's technology discourse, students generally trended toward reverting to technology more than teachers and the school's policy permitted. Moreover, their observed use was largely in terms of technology as a tool, accessing information more quickly than in books.

These student technology discourses, articulated and embodied, suggest several things about the reproduction as well as the rejection of teachers, administrator, and parent discourses. On the one hand, we saw the discursive impact of parental as well as school technology discourses with Daniel, Sara, and Ilana, indicating that students were likely influenced by the circulating discourses from higher organizational levels of home and school. On the other hand, this influence did not equate to direct or complete reproduction. For example, it is not necessarily clear where Isaiah's understanding of technology—as an effective tool to be used frequently—stemmed from. Moreover, for the most part, students at TWFS did not articulate a sense of an indiscriminate omnipresence of technology, nor did they position technology as a threat to learning or to social development, as was so often the case with parents, teachers, and administrators. That said, students at TWFS did see technology as a threat to safety, which contrasted with student survey respondents as well as with most adults at TWFS.

Summary & Implications.

Summary of how digital technology was positioned across groups. As a whole, there was much more alignment in discourses of technology than discourses of language (see Chapters 3 and 4): participants at TWFS mostly positioned digital technology in terms of its omnipresence as well as its simultaneous benefit to learning (from a supporting role) and its threat to learning.

Looking across groups, TWFS administrators, teachers, and parents all reproduced a technology as an omnipresent need discourse as well as technology-as-threat to learning and development discourse. That said, we also saw the different layers within these discourses. For example, uncertainty at times laced the omnipresence discourses at the same time that different motivations (e.g., Montessori philosophy, more general concerns) undergirded the technology-as-threat discourse. Administrators and teachers at TWFS additionally cited technology as an auxiliary tool for learning, a less common although present discourse among some parents; conversely, technology was linked to jobs more frequently by parents, although this remained an infrequently articulated discourse overall. Interestingly, while parents and educators at TWFS articulated similar discourses, their ultimate positioning of digital technology differed: parents pushed for more use of digital technology at school while TWFS educators sought a more circumscribed role.

Students were likely influenced by both school discourses as well as parental discourses; as we saw, students often articulated an understanding of digital technology that aligned with their school's most prominent discourse. Moreover and supporting the notion of an influence from the school on students, student language choice and use often seemed borrowed directly from the school, with words and phrases beyond a middle school vocabulary being deployed. In addition, two students (Ilana and Daniel) directly cited the influence of their parents on their views of technology, suggesting a relational influence between parent and student discourses as well. That said, students did not always align with the discourses reproduced by their teachers, administrators, and parents; as we saw with Daniel, Clark, and Isaiah, students also deviated from the discourses that the adults in their lives reproduced, positioning digital technology in new and different ways, such as a preferred and reliable resource.

It is also worth examining what technology discourses were not present or prominent at TWFS. For example, the articulation of a link between digital technology and the economic marketplace via an economic opportunity or utilitarian discourse was less salient than might have been expected: while this link was made by two parents and one teacher, it was not as strongly articulated as it had been in the survey, where economic opportunity was a very prominent discourse across groups, especially among parents. Of course, the actions of TWFS parents in relation to digital technology discussed above—that is, reports of parents pushing for more technology in the school day—might suggest that this economic opportunity discourse was present or salient for TWFS parents, embodied rather than articulated. TWFS educators and students were consistent across both embodied and articulated discourses, infrequently aligning with an economic opportunity discourse.

In addition, participants at TWFS did not clearly link digital technology to local, national or international contexts. This further supports the very prominent omnipresence discourse, in which digital technology's purpose and use were driven by an ambiguous and encompassing understanding, making specification of context of use irrelevant.

Moreover, technology discourses toward idealistic or transformational ends did not manifest often at TWFS. For example, positioning technology as a way to increase understanding and awareness of the world did not come up amongst TWFS participants. There were a few nods to this discourse in the survey, although it was very minor overall. Relatedly, the technology as a medium discourse—communication *through* technology reviewed in Chapter 1 (Kern, 2011)—and the communication and connection discourse seen in the survey were also not reproduced by TWFS participants. Finally, as in the survey, digital technology was not seen within a change or power frame (Warschauer & Ware, 2008) amongst participants at TWFS—in

other words, digital technology was not positioned as a way to transform learning and education itself or to shift traditional power relations.

Implications for global education and for learners. As a Montessori school, philosophically reluctant to incorporate any technology, TWFS would perhaps be unlikely to position digital technology in these more complex ways—as a medium or as a way to promote understanding and awareness, within a change or power frame. However, as we return to the final research question, these multiple discourses—articulated, embodied, and unvoiced—do have implications for understandings of global education and the resulting impact on learners. First and foremost, the multiple discourses of digital technology reproduced at TWFS would, by extension, build up different and diverse understandings of global education. This corroborates both the diverse and often conflicting ways in which digital technology has been positioned in education, reviewed in Chapter 1, as well as the complex terrain of global education that spurred the study. This also stands as a validation of an ecological approach to discourse in which individuals and institutions draw on multiple discourses in their understanding of digital technology and of global education.

Importantly, however, this detailed look at TWFS also revealed nuances in these discourses: within the larger technology-as-threat discourse, for example, there were many different layers and motivations, such as a perceived threat to a particular educational philosophy, as was the case with administrators and teachers, or as the more general threats to social development and safety that we saw with parents Marco and Christie. This suggests, then, that understandings of global education were built on multiple discourses, yes, but also discourses that were complex and layered in and of themselves. This adds another layer of complexity to the larger portrait of global education and to ecological theory.

In addition to multiplicity and complexity in discourses, we also saw trends across groups that had real consequences for global education and for learners. The struggle that we saw between parents and the school over second/foreign language was also replayed around digital technology: these groups ultimately positioned digital technology differently, despite reproducing similar sets of discourses. In doing so, parents and the school built up different and conflicting understandings of global education: for parents, global education was about economic and educational competition as well as honing an edge for that competition; for TWFS educators, global education remained centered on higher principles of learning, balanced with an acknowledgment of the changing world as well as the need to prepare students for it. We see here, then, not only how the diversity of discourses around digital technology coalesced across groups but how this created trended understandings of global education at the same time.

Lastly, the unvoiced technology discourses also point to significant limitations of the understandings of global education that were built from understandings of digital technology at TWFS but also at survey schools. Neither parents nor educators at TWFS positioned digital technology in ways that linked into understanding/awareness, equity, or societal transformation. While there were some nods to these frames in the survey, they were minor. Moreover, at both TWFS and at survey schools, digital technology was rarely seen in relation to the international world; rather, any contextualization of how digital technology was to be used was individual or national in orientation. This suggests that, across the board, the understandings of global education that resulted from how digital technology was positioned did not align with the idealistic orientations outlined in Chapter 1; rather, global education seemed to be rooted in different motives and to individualistic or nationalistic ends.

The impact of this complex scenario on students and learning at the school was necessarily complex. Students at TWFS were caught in the middle of the differing positionings of digital technology by parents and by the school: they reproduced the different discourses of both the school and of their home environments, influenced by these higher-level organizational levels in line with ecological theory. That said, some students seemed to draw on sources outside their parents or their school, indicating the possibility of other sources of influence. Technology discourse data, then, simultaneously underscore the weight of higher-level organizational levels (technology discourses in school's environment) on students as well as illustrate the possibility of non-linear and additional influence on students, in keeping with ecological understandings of discourse.

I'd like to close this chapter with a discussion of the omnipresence discourse and the technology as threat discourse. On a surface level, these stand as juxtaposed discourses: on the one hand, the perceived importance of digital technology in education given its omnipresence in the present and future and, on the other, concerns about the impact of digital technology on learning and development. However, I would like to suggest an interpretation that links them in two ways. First, trepidation or concern at times arose within both these discourses at TWFS. As we saw with the survey as well as with Rosa (Assistant Head of School), Sophie (Junior High teacher), and Melanie and Christie (parents), uncertainty and unease crept into understandings of technology's omnipresence: technology was projected to be everywhere in the future, yes, but on top of that, a sense that that future was now unknown, unpredictable, and rapidly-changing in ways that it had previously not been. In addition, the threats to learning as well as social development posed by technology and expressed by adults at TWFS boiled down to trepidation or concern of technology's impact on these arenas.

Second, these concerns could be rooted in the same thing: anxiety in the face of change. This proposed anxiety manifested in two ways. On the one hand, the omnipresence discourse could have signaled the anticipation of future discourses and ways of being that bore little resemblance to what had been known before. This prompted preemptive measures to prepare students to deal with the unknown, here in the form of including technology—to differing degrees of centrality— in education. On the other hand, the perceived threat to learning and development may have revealed concerns of losing past discourses and ways of being—traditional understandings of reading, writing, learning, working, and socializing.

In addition, the change at the heart of these proposed anxieties is itself brought about by globalization: technological innovation and the changes that it brings about represent one of the defining features of globalization. This interpretative lens would align well with what we saw in the language chapters (Chapters 3 and 4): layers of concern, anxiety, and even fear in the face of globalization and its effects undergirding discourses digital technology, as was the case with second/foreign languages.

I turn now to the final chapter and the fourth and final part of this dissertation where I look to tie together these different threads and suggest new paths for future exploration.

CHAPTER 7: IMPLICATIONS & CONCLUSIONS

Introduction

This study took as its starting point ambiguously-defined efforts to globalize K-12 education in the United States and focused on two central components—second/foreign language and digital technology—as a way to clarify these ambiguities and to explore what it means to provide an education in and for a global world. The investigation, guided by ecological theory, involved two distinct methods—a survey distributed to global schools around the United States and an in-depth focal case study of one school—in order to understand how different school actors positioned these two components in education today through discourse, how these positionings differed, and, ultimately, what this meant for understandings of global education. In this chapter, I first summarize the project design before launching into how second/foreign language and digital technology were respectively positioned via discourse by school actors at the survey and focal schools. Next, I lay out implications of these findings for global education, ecological theory, teaching, and learners. I then suggest some possible paths forward for practice. I conclude this chapter with directions for future research and some final thoughts on schooling in our interconnected world.

Summary of Project Design

This project and its design took root in an ecological approach to discourse, which acknowledges a *multiplicity* of discourses as well as their *complex, hierarchical,* and *non-linear* interaction on multiple *timescales*. In other words, the multiple discourses that individuals draw on and reproduce are influenced in complex and non-linear ways by local, national, and international scales; by multiple centers of authority, and by a past-present-future timescales (Blommaert, 2010; Foucault, 1981; Kramsch, 2002; Larsen-Freeman, 2002).

Guided by this ecological frame, the project set out to answer three interrelated research questions:

1. How do school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through discourse?
2. How do these positionings align or conflict across groups?
3. How do understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools?

To answer these questions, I developed a two-pronged project design: an online survey distributed to a broad cross-section of schools and an in-depth focal case study of one school. The survey portion of the project design was designed to provide a portrait of the discourses that a larger spread of global schools and global school actors used to position second/foreign language and digital technology within global education as well as to provide a point of comparison for the focal school, The World First School (TWFS). The survey consisted of six schools from around the United States, including TWFS. The survey instrument included closed-ended as well as open-ended questions on participants' perceptions of digital technology and second/foreign language in education today. The focal case school portion of the project design focused on one multilingual immersion K-8 school in the western US. The case study was comprised primarily of semi-structured interviews with teachers (n=4), administrators (n=2),

parents (n=3), and students (n=8); participant observations of two classrooms (Upper Elementary and Junior High) (Glesne, 2010; Miles & Huberman, 1994; Spradley, 1979); and document collection.

Responses to closed-ended survey questions were analyzed using descriptive statistics. Responses to open-ended survey questions as well as observational, interview, and document data from the focal school were analyzed using a combination of iterative rounds of inductive and deductive coding (Bogdan & Biklen, 2006; Miles & Huberman, 1994; Saldaña, 2009) and critical discourse analysis (Blommaert, 2005; Fairclough, 2001). This method of analysis allowed participant-generated discourses to emerge from the data as well as to be compared to discourses reviewed in Chapter 1 (Blommaert, 2005; Bogdan & Biklen, 2006; Fairclough, 2001; Miles & Huberman, 1994; Saldaña, 2009).

Summary of Findings

The first two research questions that guided the study asked 1) how school actors (teachers, administrators, parents, and students) respectively position second/foreign language and digital technology through embodied and articulated discourses and 2) how these positionings align or conflict across groups.

School actors positioned second/foreign language in a range of different ways at both survey schools and the focal school. Participants at the survey schools primarily positioned second/foreign language in terms of economic opportunity; cultural understanding and awareness; and numbers of people who speak a particular language. A common pairing of these discourses was an economic opportunity and a cultural understanding and awareness discourse, linking back to the idealistic and utilitarian tension—as well as the potential contradiction therein—seen in Chapter 1 (García, 2009; Kubota & Catlett, 2008). Across groups, parents positioned second/foreign language via an economic opportunity discourse more than teachers and students did. Students were divided on language's importance and positioning of second/foreign language, reproducing a mix of discourses.

The focal case study at The World First School (TWFS) provided an in-depth look at these discourses and variations across groups. In terms of language's role, students mostly reproduced economic opportunity and neoliberal language discourses, with occasional nods to additional discourses (e.g., communication, travel, and family). Administrators, teachers, and parents shared a positioning of second/foreign language's role in terms of cultural understanding and awareness, yet also differed: administrators and teachers reproduced a cognitive development language discourse while largely parents did not. Moreover, economic opportunity and neoliberal language discourses were more often reproduced by parents than by teachers and administrators. In terms of the nature of language, teachers and administrators aligned more with a modernist discourse, understanding language as discrete, standardized units tightly linked to the nation-state (Canagarajah, 2013; Kramsch, 2014). Alternatively, students used language in a way that indexed a postmodern discourse, using language as fluid and diverse semiotic resources (Blackledge & Creese, 2010; Blommaert, 2010; García, 2009; Kramsch, 2014; Weber & Horner, 2012). Finally, a globalization as well as a fear of globalization discourse threaded through many of these discourses across adults: positioning language learning within global education out of anxiety or fear in the face of globalization and its effects.

Similar to second/foreign language, digital technology was positioned in a range of different ways at the survey schools and at the focal school. At survey schools, the most prominent discourses were omnipresence; economic opportunity; learning; and balanced and responsible use. Across groups, parents more often positioned digital technology in terms of

economic opportunity than teachers, who more often positioned digital technology in terms of balanced and responsible use as well as learning. Similar to second/foreign language, students as a whole group were very mixed in the digital technology discourses they produced.

The closer look at TWFS revealed similarities as well as differences in terms of digital technology. In keeping with survey responses, the omnipresence of technology was a predominant discourse at TWFS, with additional layers related to technology's rapid change and the need to keep up with it. Also prominent was a threat to learning and development discourse, which crystalized and extended the threat inherent in the balanced and responsible use discourse seen in the survey. While an economic opportunity discourse was reproduced at TWFS, primarily by parents, it was a much more minor discourse than with survey respondents. Administrators and teachers additionally cited technology as an auxiliary tool for learning, which was a less common discourse among parents. Students were very mixed in the discourses that they reproduced, likely influenced by both school discourses as well as parental discourses. That said, they did not often reproduce an omnipresence discourse, in contrast with survey results.

Looking now across these two components and their respective positionings across groups, we can identify several themes. First, global school actors drew on and reproduced multiple and overlapping discourses in their positioning of both second/foreign language and digital technology. Moreover, these discourses were often tension-filled or even contradictory: positioning second/foreign language simultaneously in terms of economic opportunity and cultural understanding and awareness, for example, or asserting the importance of technology given its omnipresence while simultaneously worrying about its impact on learning or development. This finding aligns with ecological theorizations of discourse, illustrating the multiplicity and complexity inherent in how these two components were understood and positioned (Blommaert, 2005). Finally, the range of discourses found in this study expands our understanding of the ways in which these two components can be positioned in global education today beyond those reviewed in Chapter 1.

Second, in addition to individual variation and diversity in discourses reproduced, school groups as a whole also positioned second/foreign language and digital technology differently. Students at survey schools and at TWFS were very mixed in the discourses that they reproduced. Conversely, parents across the entire sample tended to position second/foreign language and digital technology more often in terms of economic opportunity than teachers or administrators. Teachers and administrators, on the other hand, more often leaned toward positioning these two components in terms of learning and development, on personal, social, and cognitive levels.

Importantly, the closer analysis of TWFS revealed that these group differences went beyond a superficial level; rather, these differences resulted in real struggles that impacted the learning environment. For second/foreign language and for digital technology, TWFS parents disagreed with teachers and administrators about the importance and role of these two components: parents—particularly through their actions—positioned second/foreign language as less important and positioned digital technology as more important than their articulated discourses, aligning with the market-based understanding of these two components seen in the survey. This contrasted with TWFS teachers and administrators who asserted the continued importance of second/foreign language as well as a measured approach to digital technology in both words and actions.

Taken together, then, these differences across groups as well as the overall multiplicity of discourses used to position second/foreign language and digital technology help paint rich portraits of complex individual school actors as well as school groups who were divided and

conflicted in how they positioned these two components. That said, while these findings confirm as well as expand the multiplicity of discourses around second/foreign language and digital technology found in Chapter 1, they also point to group trends within that multiplicity that have concrete ramifications for schools.

Finally, within or underneath this multiplicity, I have proposed an additional interpretive lens, highlighting how anxiety, concern, uncertainty, and, ultimately, fear could also have been a common discourse across adult positionings of both second/foreign language and digital technology. In the second/foreign language data, this fear centered on global connections that threatened established understandings of a world broken into nation states and national identities; that heralded in increased competition on global marketplaces; and that announced a future of unknowns. In the digital technology data, this fear focused on competition and survival in a world that was being forever altered by technology: fear, then, of changes to ways of working, of learning, of developing, of living.

Moving forward with this interpretation and as suggested in Chapter 6, we might think of these disparate anxieties, concerns, and fears as stemming from the same place: anxiety in the face of change. Digging deeper, we might extend this and describe this fear as anxiety about competition and survival in a world in which different identities—national identity, socioeconomic identity, human identity—are in flux and in which the safety and security once ascribed to them may no long hold true. What does it mean to be an American, German, or Lebanese citizen today as immigrants, migrants, refugees seeking safety, shelter, and opportunity settle next door? Or as "foreign" cultural icons and influences from around the global are instantaneously downloaded onto iPhones and into the local cultural repertoire? What does it mean to be a part of the lower, middle, or upper class when access to information and schooling has been dramatically democratized? Or when the job applicant pool is now open to the whole world? What does it mean to learn and develop as a human being when the entirety of a school curriculum can now be found on Wikipedia? Or when going outside to play with neighbors is replaced with playing complex, multiplayer games with people from the four corners of the world?

This interpretive lens has echoes in work done by applied linguistics (e.g., Bae & Park, 2016; Hall, 2014; Park & Lo, 2012) on the angst that comes with neoliberalism and neoliberal subject hood. These authors point us to the anxious acrobatics required of responsible neoliberal subjects who must signal their allegiance to the marketplace by demonstrating their flexibility, continuous self-improvement, and overall readiness to comply with that market. Moreover, they similarly link this anxiety and fear to shifting identities. As Hall perceptively noted, the hallmarks of globalization and neoliberalism—the "transnational reconfiguration of media, migration, and markets"—shift, alter, and destabilize identities as much as they shift, alter, and destabilizes markets (Hall, 2014, p. 262).

It is perhaps unexpected that these anxieties and fears—rooted in globalization and neoliberalism—were uncovered beneath the multiplicity discourses of second/foreign language and digital technology in this particular context. That said, these fears are nevertheless natural, understandable, and widespread. In a world marked by change to fundamental identities, it would be natural to be cautious or even fearful. Moreover, at the heart of these shifting identities are significant problems of global scope and magnitude that in and of themselves are fear-inducing: world-wide inequality, climate change, forced migrations due to war, famine, and disease. Fear in the face of these challenges would be quite understandable. Finally, the fear found in these data joins waves of concern, angst, and anxiety detectable in the United States and around the

world: the development of this research project and the writing of this dissertation spanned countless terrorist attacks (Paris, Brussels, Istanbul, Baghdad) barely separable from mass shootings (San Bernadino, Orlando); the rise of Trump and his bellicose ranting about immigrants, Muslims, and nasty women; and the British referendum vote to leave the European Union. All have links to fear: creating fear as well as being created by fear.

In other words, this discourse of fear is not surprising on many levels. What we might consider surprising was how infrequently the fear expressed in understandings of second/foreign language and digital technology was explicitly addressed or focused on the significant challenges mentioned above; rather, the fear remained nebulous, coming out from beneath other discourses. Additionally surprising, then, is the subsequent suggestion that the multiple discourses used to position second/foreign language and digital technology found in the data were perhaps not conflicting and contradictory but came from the same place, stemming from fear of globalization and its effects.

Implications for Global Education, Teaching, and Learners

The third and final research question that guided this study asked how understandings of global education manifest in the relationship between school actors' second/foreign language discourses and digital technology discourses within global schools as well as how these understandings impact second/foreign language teaching, digital technology teaching, and learners.

At a first level of analysis, the multiple positionings of both second/foreign language and digital technology across school actors and across school groups found in the data suggest tension in terms of the resulting understandings of global education. Taken individually, the multiple discourses that participants drew on and reproduced in positioning second/foreign language and digital technology would build up dramatically different understandings of global education. For example, positioning second/foreign language in terms of cognitive benefits would likely contribute to understandings of global education rooted in individual learning and development while positioning digital technology in terms of connection to others would suggest an outward-facing, less individually-oriented understanding. Looking simultaneously at the multiplicity of discourses of second/foreign language and digital technology, then, we would be left with overlapping, conflicting, and competing understandings of global education. This would amount to the messy—and possibly even messier—terrain described in Chapter 1 and the one that sparked this study.

That said, within this chaos, understandings of second/foreign language and digital technology did trend across groups, painting a clearer portrait. The tension between parents and the school at TWFS, which was echoed in articulated discourses at most of the survey schools, points to different understandings of global education being built up by parents and by educators: in positioning second/foreign language and digital technology in relation to the economic market, parents tended to support an understanding of global education linked to economic opportunity, market demands, and, ultimately, the utilitarian orientation to global education discussed in Chapter 1. Conversely, teachers and administrators, particularly at TWFS, tended to more often situate second/foreign language and digital technology in terms of learning, cognitive development, and cultural understanding and awareness, thereby suggesting an understanding of global education rooted in learning first over market demands. While not perfectly aligned with the idealistic orientation to global education reviewed in Chapter 1, the resulting understanding of global education would be significantly different than the one advocated for by parents.

At this first level of analysis, then, we see the multiple discourses and positionings of second/foreign language and digital technology built tension-filled and conflicting understandings of global education in schools. This confirms—and further complicates—the complex terrain reviewed in Chapter 1, nuancing how these different understandings of global education fall across school groups.

This complex terrain presented obstacles and challenges for the classroom—for both teaching and learners themselves. In terms of teaching, the centrality of second/foreign language and digital technology to global schools, the multiplicity of discourses around these two components, and the group-based differences that emerged meant that teaching second/foreign language and digital technology became hot spots where contention over divergent understandings global education could ignite. As we saw at TWFS, teaching second/foreign language and digital technology became a "battle" between educators and parents/students where the very use (or non-use, in the case of technology) of these components was contested. These daily struggles taxed TWFS teachers in particular, who stood at the front lines of these intersecting and overlapping battles.

Also at the front lines were students, who were surrounded by these battles and the diverging as well as conflicting positionings of second foreign language, digital technology, and global education at their core. The data presented in this dissertation attested both to the influence that these discourses had on students (e.g., Ilana's direct citation of her father in her understanding of technology) as well as to students' ability to resist those influences (e.g., Sara and Anthony's reproduction of second/foreign language discourses not indexed by teachers, parents, or administrators). In other words and in relation to ecological theory, learners were shown to be both influenced by higher organizational levels (e.g., parents, teachers, administrators) at the same time that they were shown to be influenced by additional centers of authority (Blommaert, 2010). The impact of these multiple understandings of global education on learners, then, was complex and ultimately remains unclear.

All that said, the possibility that fear of globalization and its effects could have undergirded many of the discourses for both second/foreign language and digital technology suggests another level of analysis and set of implications for ecological theory as well as for our understanding of global education. Ecological theory is indeed predicated on and accounts for the multiplicity and complexity of discourses of second/foreign language and digital technology found in the data (Blommaert, 2005; Kramsch, 2002; Larsen-Freeman, 2011). However, the finding of fear complicates and nuances our understanding of this multiplicity and complexity within ecological theorizations of discourse; specifically, the interpretation that fear threaded through many of the discourses of second/foreign language and digital technology suggests that a single discourse could undergird the multiplicity, manifesting in different ways through different discourses.

In terms of global education, this finding could suggest that larger understandings of global education may also be rooted in this same fear. Specifically, the juxtaposed understandings of global education, reviewed in Chapter 1 and discussed in both the survey and focal school chapters, may not have been so contradictory; rather, they may represent different manifestations of the same fear of change and changing identities as well as different approaches to responding to that fear. At TWFS, then, the battles over teaching second/foreign language and digital technology that so marked the overall school environment may not have been battles over divergent understanding of global education or of these two components; rather, they may have been battles over divergent approaches to responding to fears of a global world.

In the same vein, then, this finding also suggests an answer to the speculation on why second/foreign language and digital technology are so central to global education begun in Chapter 1: rather than furthering global communication, we might see second/foreign language and digital technology as two prongs of the same approach: preparing students for a turbulent, volatile market and world that evoke anxiety and concern.

This proposed rooting of global education in fear holds implications for teaching and for learners. In terms of teaching, for example, the fear that was represented in the omnipresence discourse drove the valuing and integration of digital technology at both the survey schools and TWFS. This discourse risks an unclear pedagogical orientation and approach in which digital technology is less often seen in terms of what it could do to support specific learning and development goals than in terms of its mere necessity. This points to the potential for problematic integration of digital technology into global school offerings—a "technology for technology's sake" approach.

Moreover, the dominance of the omnipresence discourse, with its undercurrents of globalized anxiety, could have also led to missed opportunities to target an overall vision of global education through digital technology: across the entire sample, seeing digital technology as a way to connect with and understand the larger world was uncommon. The predominance of an omnipresence discourse may have hindered efforts to teach digital technology from a broader, more comprehensive view.

In terms of second/foreign language, concern around shifting identities stood at the heart of TWFS Head of School's and teachers' resistance to pushing beyond modernist understandings and teaching of language. While an understandable and commonplace understanding of language (Canagarajah, 2013; Kramsch, 2014), this modernist approach led to missed or misguided learning opportunities: in electing not to address the ways in which language can be used outside its nation-state-sanctioned and standardized borders, educators missed opportunities to incorporate the ways in which language can be and is used in our global world as well as to showcase processes of meaning-making more broadly.[27]

Finally, learners may have also been impacted by this fear, although exactly how remains unclear. On the one hand, students at TWFS did not, by and large, voice the same fear of globalization and the future that their parents and teachers and administrators did. This may stand as an indication that students found discursive mooring outside the immediate higher organizational levels of their school add their family. In such a case, we could take this difference as a ray of hope: students growing up in a world marked by change may not experience the same fear that their elders do in response to those changes and shifting identities. This would align with work done by others (e.g., Blackledge & Creese, 2012; Gramling & Warner, 2016) who have pointed out that students do not always take up the traditional, neoliberal, or crisis-oriented discourses that surround them. It would also suggest that parents, teachers, administrators, leaders, policy-makers, and adults of all varieties have much to learn from their young charges.

On the other hand, however, we can also wonder if students could remain immune to this fear, salient in global education discourses as well as in their larger world. We might wonder whether, given time, students might learn to be fearful as well. This is in part corroborated by

[27] Admittedly, socializing students into postmodern understandings and uses of language is perhaps not the goal of elite bilingual institutions, such as TWFS and several of the survey schools; the often privileged choice of learning additional languages at these schools contrasts with the forced necessity of many immigrant families and students who likely experience changes to language and its use that result from globalization more directly (García, 2009).

digital technology discourses reproduced amongst students at the survey schools: students across survey school data did indeed reproduce the omnipresence discourse as well as the anxiety-infused language around future survival. The risk remains, in other words, that the fear identified in data could eventually reach students, teaching them to be fearful of the world around them.

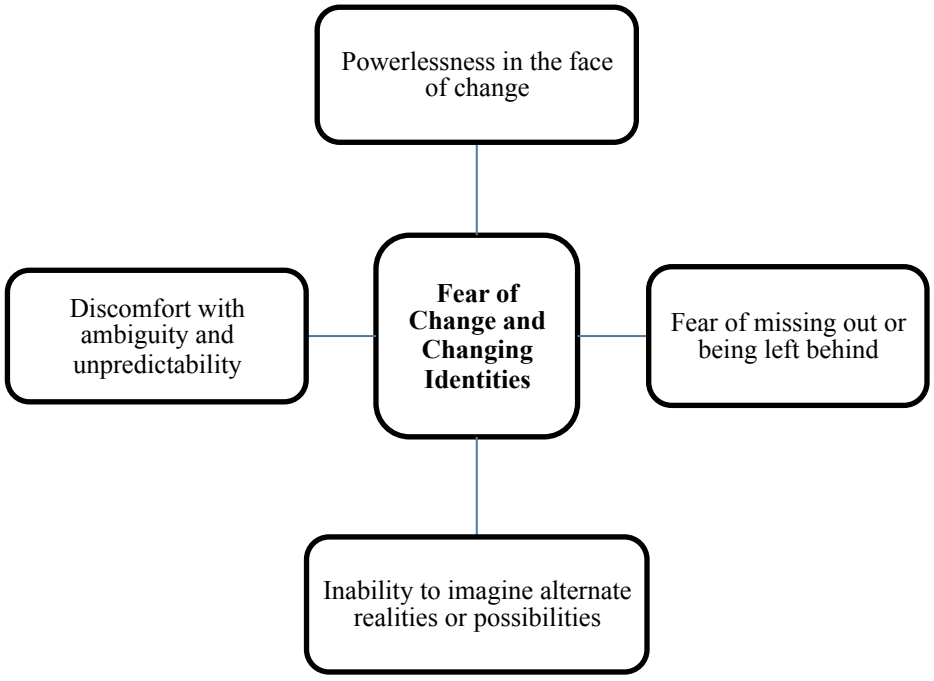
But what exactly would be so terrible about rooting global education in fear? As mentioned above, the changes as well as the significant global issues that face our planet today are indeed fear-inducing, to put it mildly. What this study underscores, then, is the need to ensure that educating in our global world works to counteract any fear of that world as well as to prepare students to take on these larger issues.

Recommendations for Practice

This leads us to what this study might suggest for global education moving forward: how might we imagine providing a global education that equips students to navigate a changing world, its challenges, and any potential fears (of change, of changing identities) that may arise from these changes and challenges?

A first step in answering this question is breaking down what I have proposed to be fear in the data into its constituent parts. In reviewing the different manifestations of concern, anxiety, and fear within the data (summarized on page 165), I see the following as central components to participant fears in the face of globalization:

Figure 7.1. Components of Fear



First and foremost, we could categorize the anxiety, concern, or fear felt by participants as feelings of *powerlessness in the face of change and a changing world* or a lack of agency in relation to how the future is unfolding on individual and global scales. This powerlessness stemmed in part from *concern over missing out or being left behind*—the perceived need to

compete in a singular global race, the rules of which were stipulated by uncontrollable external structures or forces. Relatedly, then, this fear also tied to *an inability to imagine alternative presents as well as futures*—an inability, in other words, to see that there could be multiple paths, trajectories, or races in the present as well as in the future, rather than just one. Finally, this fear linked into *discomfort with the increasingly unpredictable and ambiguous nature of the world*. Discomfort, then, in the face of an inability to predict what would be coming down the way and what it would mean.

Cultivating a pedagogical approach that works to counter these components might look to focus on several things (see Table 7.1 for a summary): first, feelings of powerlessness could be addressed by a focus on *semiotic awareness and agency* or an attunement to the orchestrated and constructed nature of meaning—an understanding that meaning is produced, not pre-determined; fluid, not fixed. With this understanding (developed through pedagogical scaffolding) arguably comes semiotic agency: an understanding that semiotic choices in production and interpretation can be made by everyone, not just those in positions of power, and that these choices have a performative impact on the world. This could highlight for students the notion that they too can play the game, contributing to the creation of meaning and the construction of reality. Moreover, semiotic agency could work to assuage fears of missing out or being left behind, illustrating the capacity to create and embark upon new paths as well as to participate in different races.

Relatedly, an ability to see and imagine *multiple presents as well as multiple futures* would also go a long way in addressing the inability to imagine alternate realities or future possibilities. Cultivating an ability to see the multiplicity of interpretations and realities in the present could take the edge off the need to compete in one particular race by opening up new spaces for exploration and agency. Moreover, feelings of angst or powerlessness about the changing future could be tempered by the capacity to imagine multiple possible future trajectories, once again opening up additional and emancipatory imagined futures.

Finally, building up *a tolerance of ambiguity* could lessen any discomfort felt in the face of the increasing lack of clarity or predictability that accompanies globalization. When individuals bring focused attention to how meaning is constructed, complex, and fundamentally ambiguous, they could become more and more comfortable with complexity, ambiguity, and unpredictability in general.

Cultivating these different mindsets and competences could not only work to counter fear in the face of globalization; it could also arguably work to better prepare students, the next generation, to take on the larger global issues and crises that define our present and future. With a bolstered ability to see the complexity that constitutes social reality—from interactions to international peace treaties—, students would be more likely to seek out a nuanced, detailed, layered understanding of these pressing social and political issues. This could protect against knee-jerk or oversimplified reactions and solutions to what are complex problems. Moreover, with a greater ability to tolerate the ambiguity that necessarily comes with this complexity, students would likely be more comfortable in the grey areas that define these global problems. This appreciation of complexity and tolerance of ambiguity, combined with agency and an ability to imagine alternative futures, could also lead to taking action, working to critically and creatively create new paths forward.

Admittedly, any causal link between these proposed pedagogical foci, cultivated at the K-12 level, and the subsequent mindsets and actions of students as they grow up would be difficult to prove empirically. Moreover, I fully admit that this proposed linking between education and creating a more fearless, critical, and agentive student body falls along idealistic lines.

Nevertheless, this linking also represents a core tenant of education itself: the hope that what is learned in school goes on to influence and scaffold students' future lives. This proposal, then, is as good a place as any to start an exploration of how students could be better equipped for our global world.

Table 7.1. Proposed Pedagogical Foci

Fear	**Pedagogical Focus**
Powerlessness in the face of change and a changing world	Semiotic awareness and agency
Concern over missing out or being left behind	Semiotic awareness and agency Multiple presents and futures
Inability to imagine alternate realities or possibilities	Multiple presents and futures
Discomfort with ambiguity and unpredictability	Tolerance of ambiguity

These proposed pedagogical foci would be well addressed by placing *discourse analysis* at the heart of global schools. Discourse analysis is at its core an analysis of meaning-making or of "meaningful symbolic behavior" (Blommaert, 2005, p. 2) that looks to tease out the intertwined relationships between forms; the social, economic, political, and historical contexts of their creation and interpretation; meaning; and impact or action on the larger world. Moreover, discourse analysis has been used to promote the pedagogical foci outlined in Table 7.1 (e.g., Freadman, 2014; Kramsch & Vinall, 2015; Vinall, 2012, 2016). For example, Freadman's use of a narrative hook and arc to guide language learning classes juxtaposes different versions of a particular event and helps students to see the multiple subjectivities, positionalities, histories, and contexts that they create (Freadman, 2014). In a similar vein, Vinall (2012, 2016) uses important narratives from Latin America (e.g., the Conquest of the Americas and the legend of *La Llorona*) to explore the different ways in which history—and meaning-making more broadly—is constructed, asking students to analyze and compare different representations as well as to imagine alternative possibilities and subjectivities. Lastly, Richardson (2017) found that students who were guided to analyze the different genres, perspectives, and silences in German fairytales grew not only to tolerate ambiguity but also to embrace it.

These examples of how discourse analysis can target these different pedagogical foci all stem from second and foreign language classrooms. There is nothing to say that these foci could not also be targeted across a curriculum.[28] That said, I see second/foreign language classrooms as particularly ripe for cultivating these discourse-analysis-based mindsets and competences needed

[28] You could imagine, for example, science educators supporting students in examining the speech acts (Austin, 1979) voiced by different sides of the Dakota Access Pipeline as well as the different subject positions these actors moved between, enabling students to see how historic, cultural, and political relationships of domination are impacting environmental activism today. Literature courses could zoom out from the classic 5-paragarph essay required for many Advanced Placement exams or college admissions, contextualizing the academic genres of power, their construction, and ways they have and can be resisted (Bourdieu, 1991; Briggs & Bauman, 1992).

to take on our globalizing world and any potential fear that may stem from it. More specifically, I see the combination of the two components at the heart of this project—second/foreign language and digital technology—as fertile ground for this kind of discourse analysis work, for targeting these pedagogical foci, and for preparing students for this globalizing world.

Of course, technology—digital and otherwise—can and has been used in the second/foreign language classroom to multiple ends (e.g., Blake, 2008, 2011; Chun, Smith, & Kern, 2016; Ware & Hellmich, 2014). However, digital technology has often taken on a relatively traditional role in the second/foreign classrooms, used to bolster basic language skills or to provide access to "authentic" native speaker resources (Kern, 2014; Ware & Hellmich, 2014). A more promising orientation to digital technology, highlighted by Kern (2015), draws students' attention to the mediational nature of technologies, including language—in other words, the use of digital technology in the second/foreign language classroom can draw students' attention to how language molds as well as reflects contexts and meanings, bringing to the fore the multiple, complex, and ambiguous ways of meaning-making that are the foundation of these pedagogical foci.

An interesting path forward, then, would be to explore how this kind of focus on digital technology might target the cultivation of these pedagogical foci through carefully-crafted and scaffolded discourse-analysis-based activities at the K-12 level. I will detail two potential strategies—textual juxtaposition and text translation—to illustrate how this kind of focus on digital technological mediation in the language classroom could be used to cultivate the mindsets and skills needed to address our global world and any fear that might arise in its face (Kern, 2000; The New London Group, 1996). In the first, teachers juxtapose different digital and non-digital texts—written letters, novels, blog posts, tweets, multimodal images—and guide students in an analysis of how the use of different forms, modes, or genres mean different things in different contexts when produced/interpreted by different people. In a beginning language class, for example, one could imagine using different examples of common greetings—such as those in a textbook, in a text message, and in a text-based news blog—and asking students to analyze how the forms change across media and how these forms would be interpreted by different people in different contexts—what would happen, for example, if the slang found in a text message were used in a news blog? Or by a prominent politician? In a classroom? At more advanced levels, students could analyze how politicians, activists, and artists use different forms (written speeches, tweets, plays or multimedia installations) to argue the validity of their viewpoint on, for example, what constitutes a family in France or that status of women in the Japanese workforce. Students could also be asked to consider the different positionalities, histories, and contexts brought to bear on these texts, what is said and what could have been said, as well as, as a result, how meaning(s) is/are made and remade within and across media. At all language levels, then, these juxtapositions—or, more specifically, carefully crafted and scaffolded classroom activities built around juxtaposition—could help students to break down how form, meaning, contexts, and power are inter-articulated.

This juxtaposition between texts could be complemented with text translation or transposition—asking students to translate texts across genres and modes (e.g., Kramsch & Huffmaster, 2014). In a beginning-level language course, for example, how might a simple poem by Jacques Prévert or a haiku by Masaoka Shiki be reinterpreted as a silent film? Or, in more advanced classes, how might the argument made in a graphic novel *Persepolis* might be re-created without images, such as in a series of emails or short videos? This translation would sensitize students to the affordances of different modes and genres; hone their ability to create

meaning across them; and bolster, through application, their understanding of the relationship between those forms and the meaning that they create. Importantly, this translation process would also support student's agency in meaning-making, showcasing their ability to work both within and against conventions to craft meaning (Kern, 2015; The New London Group, 1996).

Depending on the activities built out by the instructor, these two strategies offer many opportunities to develop the pedagogical foci outlined on pages 170-171. For example, highlighting how meanings change when "LOL" is used in an online forum versus in a newspaper article through textual juxtaposition would support the development of semiotic awareness by drawing student attention to how similar forms take on different meanings based on context of production and interpretation. Similarly, an instructor could use text juxtaposition or transposition to highlight what is not said and what could have been said in a particular text, keying students into alternative interpretations and possibilities. Or, a transposition unit framed around ambiguities in both the production and interpretation of a range of texts could support a bolstered tolerance of ambiguity. There are, in other words, many possibilities for how a focus on the mediational nature of digital technology in the K-12 language classroom could be used to support semiotic understanding and agency; an ability to imagine multiple realities and futures; and a tolerance of ambiguity.

In many ways, this proposal—the specific focus on the mediational nature of technology in the language learning classroom as well as the larger approach to education in our global world— is ecological in nature: it places the complexity of our world and its challenges at the center of curriculum, supporting students in understanding the multiple, complex, non-linear, and yet power-imbued ways in which the past, present and future as well as the local, national, and international are brought to bear on texts, interactions, and the different problems that the world faces. This proposal, in other words, weaves together the different components of this study and offers them as one possible way forward toward better educating in and for our global world.

Limitations and Directions for Future Research

The current study is limited in several ways. A first limitation can be found in the sample size and sampling method. The five survey schools represented a range of different language and technology models as well as global school types; that said, this was a small sample of convenience that was engineered to ensure an adequate contextualization for the focal school findings but that does not allow for wide-scale generalizability or for fine-grained analyses across these models and types. Similarly, the focal case study allowed for in-depth understanding of one context, but this methodology does not lead to wide-scale generalizability.

A second limitation stems from the design of the data collection instruments. These instruments were not perfect and influenced the data that was collected. For example, the survey did not allow for follow-up with participants to clarify their answers; while surveys routinely struggle with this methodological challenge, steps could have been taken to allow me as the researcher to follow up with some participants following the survey administration. In addition, I contextualized survey and interview questions "in education today" rather than "in global education." This choice was made due to the wide range of definitions of "global education" that were found in the pilot studies. Nevertheless, this less-targeted contextualization made the data collected less strongly tied to the phenomenon of global education and required a larger interpretive leap in the analysis phrase.

A third limitation can be found in how data collected from these instruments were analyzed. The creation of discourses from participant data was done to respect the ecological approach taken in the study. However, the creation of these discourses necessarily adds in a

subjective layer to analysis. This subjectivity was to some extent mitigated through the collaborative confirmation of these categories with two colleagues. That said, there is arguably overlap in the different discourses identified. Moreover, the application of these categories to the data did not undergo inter-rater reliability procedures, which would have strengthened the analyses.

In addition to the coding procedures, limitations in the analysis can also be found in the foundational assumptions of the study as well as discourse analysis more broadly. For example, the interview and survey analysis assumed that participant responses included the most important or most salient discourses used to position the two central components of the study. It is possible, though, that participants drew on additional salient discourses that were not voiced. In addition, the discourses articulated and embodied by participants likely did not fully or perfectly represent how individuals perceived or positioned digital technology or language; the ways in which these components are understood are necessarily complex, contextually-dependent, and difficult to pin down. As such, these answers represented a particular snapshot of how participants were understanding language and technology at that moment and in that particular context.

These limitations interact with the study's findings to set the stage for additional questions and further avenues for research. A first avenue, stemming from limitations around sample size and sampling method, would be to better understand differences in how second/foreign language and digital technology are positioned across different kinds of schools. A more robust study—or series of studies—that includes in-depth qualitative focus on these different models would be needed to dive deeper into these differences as well as to extend and/or nuance the generalizability of the current findings.

Looking to see how a range of global school models position second/foreign language, digital technology, and global education more generally is a particularly important avenue of research given the unequally distributed nature of many of these efforts to globalize K-12 education (Hull & Hellmich, in press). This could suggest that schools serving elite populations position these components differently than schools serving students from more modest backgrounds; consequently, this might indicate that these schools set up students for different futures. Said another way, analyzing how both second/foreign language and digital technology are positioned across different school types could contribute to efforts to identify the ever-evolving ways in which educational systems produce inequality and unequal opportunities for success. Moreover, this would address an additional limitation of the current study: the elite nature of TWFS and several of the survey schools.

Another avenue of research is related to the construct of "global education." Given the range of definitions given by participants, it would be productive to examine what exactly is meant by "global education" by different groups of school actors and whether or not there are differences in these definitions across schools or types of schools. Pushing this even further, we might come to question the construct of "global education" itself and what counts as a "global school." We could argue that all schools today are facing pressures and changes that result from globalization, calling into question the operationalization of "global education" used in this study and in the education community more broadly. Future research that critically examines these definitions would help clarify impacts of globalization on American schools and how we might ask better questions to support all schools in this time.

An additional direction for research would be to explore how second/foreign language and digital technology are positioned within efforts to globalize K-12 education outside the United States. This would further contextualize the findings of this study, situating the

multiplicity of discourses of second/foreign language and digital technology within a broader conversation. In addition, looking into efforts to globalize education—as well as discourses of second/foreign language and digital technology—around the world could potentially provide critical comparisons and paths forward for efforts in the United States.

A final series of future inquiries stem from the suggested finding of anxiety or fear beneath discourses of both digital technology and second/foreign language. As suggested above, it would interesting to explore how the proposed use of discourse analysis in secondary schools to counter this fear might work toward cultivating semiotic understanding and awareness; an ability to see multiple presents and futures; and a tolerance of ambiguity. Advocating for discourse analysis or elements of it in the language classroom is certainly not new (e.g., Freadman, 2014; Kern, 2014; Ware & Kramsch, 2005), although its application to secondary settings and larger curricula has been studied less. Questions remain, in other words, on how this proposal would intersect with the reality of K-12 classrooms and with efforts to globalize K-12 education—realities such as standardized testing, resource allocation across departments, and differences in teacher preparation. Moreover, it would be important to test out the assumptions underlying these recommendations for practice, investigating if, how, and under what circumstances discourse analysis techniques could be used to develop these mindsets and skills. Relatedly, it would be interesting to explore, through a longitudinal research design, what impact these mindsets and skills might have at different points in a student's development throughout schooling and beyond.

It would also be interesting to explore in more detail if and how students develop the anxiety or fear of shifting identities that adults manifested across different school types. The findings on whether or not students come to appropriate the discourses that their parents, teachers, and administrators reproduced were unclear, and it would be worth further investigation to see if students are in fact fearful of their globalizing world as well what factors might support student resistance to these narratives.

Finally, it is important to step back from this suggested interpretive lens itself, interrogating it in and of itself. This finding of fear came about in a time of fear, and it would be fair to ask how much this larger environment of fear influenced the analysis. I certainly acknowledge this potential and, to counteract it, I have tried throughout the study to offer additional interpretations for the current data. Nevertheless, I think that the finding of fear is a valid one. Moving forward, though, it would be important to explore in more detail the construct of fear itself in relation to globalization, its manifestations, and how we might study it in different contexts.

Final Thoughts

To end this work, I would like to circle back to the beginning, to the different questions that sparked this dissertation and that composed the preface:

> *What exactly do we mean by educating and education in this globalizing context? What are we educating students with—what philosophy? what pedagogy? what values? What are we educating them for—what goals? what vision? what kind of imagined future? What, in other words, do we mean when we say "global education"? And, perhaps most importantly, does it matter?*

Throughout this dissertation, we have seen that what school actors mean by global education is far from clear—participants positioned second/foreign language, digital technology,

and, as a result, global education itself in a range of complex and at times contradictory ways. What we educate students with—the philosophy, pedagogy, and values—as well as what we educate them for—the goals, vision, and imagined futures—varies greatly across individuals and groups in ways that create real tensions for educators and parents alike.

That said, the red thread throughout this work—the presence of anxiety, concern, or even fear in the face of globalization—suggests that, on some level, global education efforts may look to educate students out of concern for the change that comes with globalization, preparing them with the skills and mindsets needed to survive in a volatile world marked by vulnerability and unpredictability.

So, does any of this matter?

The world today is a complicated, scary place: wars wage, borders fall and new ones rise, jobs move, resources disappear, inequality soars. And if the recent elections in the United States and around the world have taught us anything, it is the staggering need for education: for the ability to understand the interconnection of our local, national, and international communities; to reject easy fixes to enormous problems; and to see how fear itself can be leveraged to co-opt hearts, minds, and actions.

In other words, how we are approaching education in and for this global, complicated, scary world matters a great deal.

So rather than teaching students to let fear go unfettered or to bow to market demands, an education truly in and for our global world should show students how to understand that complex, ambiguous, and changing world, and, most importantly, how to imagine and create different, brighter futures realized through their own actions.

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APPENDIX A: SURVEY PROTOCOL

n.b. *This is the basic skeleton of the survey distributed to participating global schools around the United States via the Qualtrics platform. Population-based differences are marked in italics.*

I. Adult Survey

Education Today

Directions: I am interested to know how you think about education in today's world. Please respond to the following question in the space below.

What does a "global education" mean to you? (open ended)

Language and Education Today

Directions: I am interested to know how you think about second or foreign language learning and education in today's world. While different institutions have different models for language learning and may use different terms, this study is attempting to forge a middle ground that encompasses all models and orientations to language learning. In that spirit, please consider the following definitions: Both second language learning and foreign language learning mean learning an additional language(s) beyond the "native language." Traditionally, second language learning refers to learning a language that is often used in the learners' community; foreign language learning refers to learning a language that is not often in the learners' community. Please respond to the following questions.

On a scale of 1 to 5, how important is learning second or foreign language(s) in education today?

1 Not Important
2
3
4
5 Very Important

Please explain your answer to the previous question. (open ended)

What second or foreign languages, if any, are most important for students in the U.S. to learn today? List which ones you think are most important below. (open ended)

Please explain your answer to the previous question. (open ended)

Technology in a Global World

Directions: I am curious to know more about how you see digital technology within education today. Digital technologies are technological tools that allow users to easily access, store, transmit, and manipulate information. Examples of digital technologies include the Internet, computers, and "smart" devices, as well as the different programs and applications that can be used on these devices. Please respond to the questions below.

On a scale of 1 to 5, how important is learning about digital technologies in education today?

1 Not Important
2

3
4
5 Very Important

Please explain your answer to the previous question. (open ended)

What digital technologies, if any, are most important for students in the U.S. to learn? Pick up to three (3).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Please explain your answer to the previous question. (open ended)

On a scale of 1 to 5, how important are digital technologies in learning second or foreign languages today?

1 Not Important
2
3
4
5 Very Important

Please explain your answer to the previous question. (open ended)

What digital technologies, if any, are most important for students in the U.S. learning second or foreign languages? Pick up to three (3).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software

N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Please explain your answer to the previous question. (open ended)

Language Use

Parents
Directions: I'm curious to know more about how you use different languages in the school and outside school. The following pages contain some questions about how you use different languages.

Which of the following statements best describes you?
I speak my native language, and I do not know or use any other languages.
I mostly speak one language, but I have studied and used other languages in the past.
I speak two or more languages, and I use them on a regular basis.

What language(s) do you use at your student's school? (open ended)

How do you use this(these) language(s) at your student's school? (open ended)

What language(s) do you use with your student outside school? (open ended)

How do you use this(these) language(s) with your student outside school? (open ended)

Teachers
Directions: I'm curious to know more about how you use different languages in and outside school. Below are some questions about how you use different languages during your day.

What grade level do you teach?
Pre-Primary/Pre-Kindergarten
Primary/Kindergarten
Elementary
Middle School/Junior High
High School
Other (please specify) _____

What subject do you primarily teach?
Math
History
Science
Second/Foreign Language
Language Arts
Economics
All subjects
Other (please specify) _____

Which of the following statements best describes you?
I speak my native language, and I do not know or use any other languages.
I mostly speak one language, but I have studied and used other languages in the past.
I speak two or more languages, and I use them on a regular basis.

What is the primary second/foreign language that you teach?

French
Spanish
American Sign Language
German
Arabic
Mandarin Chinese
Italian
Other (please specify) _____

What language(s) do you use with students in the classroom? (open ended)

How do you use this(these) language(s) with students in the classroom? (open ended)

What language(s) do you use with colleagues in the school? (open ended)

How do you use this(these) language(s) with colleagues in the school? (open ended)

What language(s) do you use outside school? (open ended)

How do you use this(these) language(s) outside school? (open ended)

Administrators/Staff

Directions: I'm curious to know more about how you use different languages in school and outside school. The next pages contain some questions about how you use different languages.

How many languages do you know?

I speak my native language, and I do not know or use any other languages.
I mostly speak one language, but I have studied and used other languages in the past.
I speak two or more languages, and I use them on a regular basis

What language(s) do you use with students in the school? (open ended)

How do you use this(these) language(s) with students in the school? (open ended)

What language(s) do you use outside school? (open ended)

How do you use this(these) language(s) outside school? (open ended)

Technology Use

Directions: I am interested to know how you use digital technology on a daily basis. Digital technologies are technological tools that allow users to easily access, store, transmit, and manipulate information. Examples of digital technologies include the Internet, computers, and "smart" devices, as well as the different programs and applications that can be used on these devices. Please respond to the questions in the spaces provided.

Teachers

Think about the different digital technologies that you use in instruction. Rank top three (3) most used, (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)

Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Administrators/Staff
Think about the different digital technologies that you use during your work day. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Parents
Think about the different digital technologies that you use during your day. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.

Other (please specify) _____

What do you use these digital technologies for? (open ended)
Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

Teachers
Think about the different digital technologies that students use in your classroom. Rank top three (3) most used, (e.g., 1 = most used, 2 = second most used, 3 = third most used).
Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Think about the different digital technologies that you ask students to use during the school day. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used). *Administrators/Staff*
Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

What do students use these digital technologies for? (open ended)
Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

Parents

Think about the different digital technologies that your child uses outside school. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

What does your child use these digital technologies for? (open ended)

Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

All Lastly, I'm curious to know how you use digital technologies outside school. Think about the different digital technologies that you use outside school. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

What do you use these digital technologies for? (open ended)

Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

Thank you for taking the time to participate in this survey. Do you have any final comments to add? (open ended)

II. Student Survey

n.b. *Changes for immersion environments are in italics.*

Education Today

Directions: I am interested to know how you think about education today. Please type your answer to the next question in the text box below.

What does a "global education" mean to you? (open-ended)

Language and Education Today

Directions: I am interested to know how you think about second or foreign language learning and education today. Both second language learning and foreign language learning means learning another language after your first language. Second language learning means learning a language that you can use outside school in your city. Foreign language learning means learning a language that you don't often get to use outside school in your city. Please type or click on your answers to the questions below.

On a scale of 1 to 5, how important is learning second or foreign language(s) in education today?

1 Not Important
2
3
4
5 Very Important

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

What second or foreign languages, if any, are most important for students in the U.S. to learn today? List which ones you think are important below. (open-ended)

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

Technology in a Global World

Directions: I am curious to know more about how you see digital technology in education today. Digital technologies are technological tools that allow people to easily access, store, transmit, and manipulate information. Examples of digital technologies include the Internet, computers, and “smart” devices, as well as the different programs and applications that can be used on these devices. Please respond to the questions below.

On a scale of 1 to 5, how important is learning about digital technology in education today?

1 Not Important
2
3
4

5 Very Important

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

What digital technologies, if any, are most important for students in the U.S. to learn? Pick up to three (3).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students to learn.
Other (please specify) _____

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

On a scale of 1 to 5, how important are digital technologies in learning second or foreign languages today?

1 Not important
2
3
4
5 Very Important

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

What digital technologies, if any, are most important for students in the U.S. learning second or foreign languages? Pick up to three (3).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Video clips

Audio clips
N/A: I do not think digital technologies are important for students learning a second or foreign language.
Other (please specify) _____

Why? Please explain your answer to the previous question with a few words or sentences below. (open-ended)

Language Use

Directions: I'm curious to know more about how you use different languages in your classroom and outside school. Remember: second language learning means learning a language that you can use outside school in your city. Foreign language learning means learning a language that you don't often get to use outside school in your city.On the next pages are some questions about when you use different languages.

What second/foreign languages are you learning in school? Check all that apply.
Arabic
Japanese
French
Mandarin Chinese
Spanish
American Sign Language
Italian
German
I am not learning a second/foreign language in school
Other (please specify) _____

On this page, I'm curious to know about language use with your teacher in your second/foreign language class*/classes*.

What language(s) do you use with your teacher in your second/foreign language class*/classes*? (open-ended)

How do you use this(these) language(s) with your teacher in your second/foreign language class*/classes*? (open-ended)

On this page, I'm curious to know about language use with other students in your second/foreign language class*/classes*.

What language(s) do you use with other students in your second/foreign language class*/classes*? (open-ended)

How do you use this(these) language(s) with other students in your second/foreign language class*/classes*? (open-ended)

On this page, I'm curious to know about language use outside school.

What language(s) do you use outside school? (open-ended)

How do you use this(these) language(s) outside school? (open-ended)

Technology Use

Directions: I am interested to know how you use digital technology on a daily basis. Remember: digital technologies are technological tools that allow people to easily access, store, transmit, and manipulate information. Examples of digital technologies include the Internet, computers, and "smart" devices, as well as the different programs and applications that can be used on these devices. Please respond to the questions below.

Think about the different digital technologies that you use in your second/foreign language class*/classes*. Rank the top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)
Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

What do you use these digital technologies for in your second/foreign language class*/classes*? (open-ended)

Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

Are there any other digital technologies that you use in your second/foreign language classroom */classes* but that your teacher doesn't know about? List them here and what you use them for. (open-ended)

	Digital Technology	What I Use It For
1		
2		
3		

Finally, think about the different digital technologies that you use outside school. Rank top three (3) most used (e.g., 1 = most used, 2 = second most used, 3 = third most used).

Social networking platforms (e.g., Facebook, Twitter, Instagram)
Online collaboration tools (e.g., GoogleDocs, wikis)
Games
Tutorial programs (e.g., Khan Academy, Rosetta Stone)
Email
Video conferencing
Text-based online discussions or chat (e.g., forum discussions or chat rooms)
Word processing tools (e.g., Microsoft Word, Pages, Text Editor)

Presentation tools (e.g., PowerPoint, Prezi, Keynote)
Online research tools (e.g., Wikipedia, Google)
Webpages (e.g., news websites, organization sites)
Programming/coding platforms
Video or photo editing software
N/A: I do not think digital technologies are important for students in the U.S. to learn.
Other (please specify) _____

Please describe how you use these three (3) digital technologies outside school. (open-ended)
Most Used Digital Technology
Second Most Used Digital Technology
Third Most Used Digital Technology

Thank you for taking the time to participate. Do you have any final comments to add? (open-ended)

APPENDIX B: INTERVIEW PROTOCOL

n.b. *This is a basic template for the semi-structured interviews done at the focal school. This protocol was tailored for each subgroup (parents, teachers, administrators, and students), often across multiple interviews. See Chapter 2 for more detail on interviews and the different populations at the focal school.*

I. Perceptions

Global Education

When you hear the phrase "global education," what comes to mind? What does that mean for you?

A lot of schools are looking to integrate a global perspective into the educational experience of their students. How do you see your school integrating the global?

Language

What languages do you speak? How did you come to learn them?

What has been the most important part about using/knowing multiple languages for you? How has using/knowing multiple languages impacted you?

What is the role of second/foreign languages in education today, in general, from your point of view? What is the role of second/foreign languages in the education provided here?

When thinking about students, why do you think it's important or not important for students to learn a second/foreign language today?

Why are French/Spanish/English important for students to learn today? What other languages would be important? Why?

Technology

What has been the most important part about using/knowing about (digital) technology for you? How has using/knowing about technology impacted you?

What is the role of (digital) technology in education in general today, from your point of view? What is the role of (digital) technology in the education provided here?

When thinking about students, why do you think it's important or not important for students to learn about (digital) technology today?

What (digital) technologies would be important for students to learn today? Why?

II. Uses

Language

What languages do you use at home or at work? What languages do you use with students at the school?

[Teachers]

How do you react usually when students ask you something in the "wrong" language?
How do you deal with code switching (i.e., mostly Spanish/French but some English) in the classroom?
What factors lead you to correcting form vs. focusing on communicative ability?

What are you goals for language use for you/your students?

Technology

What kinds of digital technology do you use in your work and personal life?
[Teachers]
What kinds of digital technologies do you ask students to use in instruction? What do they use it for?
How do you teach kids to use technology? Where/when do they learn it?

Are there technologies that you wish you or the students could use more or less of in the school?

What are you goals for technology use for you/your students?

APPENDIX C: SAMPLING OF CODES

Inductive Codes

Cross-Component
Context (local, international, national)
Threat
Cultural understanding & awareness
Economic opportunity
Security/defense
Communication (and connection)
Globalization/fear of globalization

Second/Foreign Language
Power
Cognitive development
Numbers

Digital Technology
Learning
Social
Omnipresence
Balanced/responsible use

Deductive Codes

Cross-Component
Idealistic
Utilitarian
Neoliberal

Second/Foreign Language
Modernist
Postmodernist

Digital Technology
Technology-as-threat
Technology-as-benefit
Technology-as-tutor vs. –tool vs.-medium (Kern, 2011)
Technology: learning, power, change frames (Warschauer & Ware, 2008)