Boundary Crossing in Researching, Understanding, and Improving Language Education: An Introduction and the Tuckerian Impact

Dongbo Zhang

Graduate School of Education, University of Exeter, UK d.zhang4@exeter.ac.uk

Ryan T. Miller

Department of English, Kent State University, USA mill129@kent.edu

"We must describe the needs of the children and of the adults who desperately seek access to educational, social, and economic opportunities, not in the arcane and jumbled jargons so characteristic of academia, but with the precision, the elegance, and the simplicity of an artist. Only then can we hope to reach and to affect those responsible for the formulation of public policy." (Tucker, 2000c, p. 26)

1 Boundaries, Boundary Crossing, and Learning

The world is full of boundaries. There are visible geographical boundaries like physical borders between countries as well as less visible or invisible boundaries like socio-cultural differences that define communities. This is similarly the case for our inquiry into and interaction with the world around us. In educational sciences, there are diverse boundaries that often define who we are, what we do, and how we do things. We form distinct disciplinary communities (e.g., anthropology and sociology of education, policy studies, educational psychology, learning sciences, and cognitive neuroscience of education) and accordingly define our scholarly identities. There are also paradigmatic labels (e.g., positivism, post-positivism, and constructivism) and methodological approaches that define and characterize how we study, approach, and interpret educational issues. Educational research is further divided, and hence boundaries created, in accordance with diverse units of inquiry (e.g., from system and policy to school and classroom, and from the teacher to the student/learner), environments of education and modes of educational delivery, so on and so forth. Boundaries have been created, and continue to be created, voluntarily or involuntarily, which compartmentalize educational researchers and educators alike in defined zones. We are often confined by these boundaries socially, institutionally, and academically. These boundaries create discontinuities between theory and practice or between knowledge generation and sharing, as well as between various socio-cultural or educational settings, among many others. Such boundaries hinder the development of insights into the complexity of education and efforts to improve education.

Luckily, these boundaries can be crossed. Boundary crossing, as defined by Suchman (1994), refers to how professionals "enter into territory in which we are unfamiliar and, to some significant extent therefore unqualified" (p. 25). Boundary crossing restores continuity and brings learning potential (Ackerman & Bakker, 2011). Crossing boundaries involves constant reflection on and negotiation and contestation of ideas. Through boundary crossing, accepted ideas are scrutinized and challenged and new ones generated. Educational research has been

influenced by anthropology, sociology, psychology, information and communication technologies, critical theories, policy studies, and more recently, data sciences, to name just a few. Interdisciplinary, collaborative work is being accepted as a new norm. The "paradigm war" has also been mitigated through the movement of mixed methods in educational research (Johnson & Onwuegbuzie, 2004). Through decentering anything "mainstream" and crossing boundaries, we gain more comprehensive and deeper insights into education as well as approaches to improving education policy and practice.

Akkerman and Bakker (2011), based on an integrative review of major studies on boundary crossing, concluded that four major mechanisms constitute the learning potential of boundary crossing, namely, identification, coordination, reflection, and transformation. Yet, crossing boundaries to achieve the learning potential is both challenging and risky. Stepping into an uncomfortable yet important zone requires considerable renegotiation and reorientation. Crossing boundaries for expansive learning and an understanding of all sides of the education prism, particularly in a world that is quickly changing, is not easy. In boundary crossing, we "face the challenge of negotiating and combining ingredients from different contexts to achieve hybrid situations" (Engeström et al., 1995, p. 319). What boundaries to cross and how to cross them is both collective and personal. Navigating and negotiating these issues can be particularly daunting for junior scholars, who are often faced with a multitude of challenges and a multiplicity of positionings: personal, institutional, and academic. Expansive learning through boundary crossing, in a similar vein, applies to educational practices as well. Most if not all educational researchers are educators themselves, who are often faced with crossing boundaries of pedagogical ideas, educational systems, and institutional policies. To achieve the learning potential of boundary crossing and grow as a scholar and educator, or in Lave and Wenger's (1991) words, to move from "legitimate peripheral participation" to a core member of "communities of practice," the role of mentors and expert boundary crossers cannot be overstated (Barnett, 2008).

2 Boundaries in Language Education, G. Richard Tucker, and Boundary Crossing

The aforementioned outline of boundaries, boundary crossing, and learning underpins this volume. It has never been more important to cross boundaries in researching and understanding the complexity of language education and improving language education policy and practice. There are many "traditional" labels which we use, or boundaries created, to define who we are and what we do as language educators and/or researchers of language education. For example, in our research and practice, we differentiate between second, foreign, and heritage language; language majority vs. minority students; TESOL vs. World Languages (or Modern Foreign Languages); and within World Languages, "commonly taught languages" vs. "less-commonlytaught languages." Programmatically, we differentiate between traditional foreign language programs, content-based instruction, and language immersion; and between programs for young school learners vs. university-based programs. Contextually, there is foreign language learning in a traditionally monolingual context vs. learning a language in a societal context or bilingual/multilingual societies. Disciplinarily, language education scholars also work with boundaries that define subfields: second language acquisition, classroom pedagogy, language policy and planning, language teacher education, language assessment and testing, to name just a few. Within the domain of language, there are further linguistic knowledge and skill labels that

define what we do as researchers, not to mention the diverse languages we research and teach. There are also associations that seem to define further boundaries in our academic and professional life, such as NABE (National Association of Bilingual Education) vs. TESOL (Teaching English to Speakers of Other Languages) International Association vs. ACTFL (American Council on the Teaching of Foreign Languages) vs AAAL (American Association for Applied Linguistics) vs. AERA (American Educational Research Association). Likewise, the "paradigm war" mentioned earlier has been specifically the case in language education research. While some scholars underscore researching and understanding cognitive processes of acquisition/learning of different linguistic skills in different learners, in different contexts, and through different mechanisms, others appreciate the social and semiotic nature of language learning and probe into the socio-cultural and political dimensions of language education (e.g., Kramsch, 2008; Pennycook, 2001; Van Lier, 2006).

Other than the labeling and boundaries above that may echo resonantly in our mind, there are also issues emerging in this quickly changing world that call for (re-)examination of boundaries that might have been taken for granted. For example, the COVID-19 pandemic, which broke out while this book was being prepared, has called our attention to the boundary between traditional, face-to-face teaching and learning of languages and technology-supported virtual learning. At a more hidden but deeper level, the values of intolerance of racism and xenophobia are at risk of being devalued through "othering" with the changing economic and political situations in the world. The anti-Asian racism following the initial outbreak of COVID-19 in China and other Asian countries, and the killing of George Floyd in the United States and the global resurgence of the Black Lives Matter movement in the midst of the pandemic are calling for further action on systemic racism. All these have (re)oriented us to critical issues around language, culture, society, and education, and to the importance of ambitious thinking and innovative practices in language education for promoting diversity, inclusion, equity, and social justice.

To research and understand the broad meaning (cognitive, social, cultural, humanistic, and political) of language education and improve policy and practice, the boundaries outlined above, and many others, must be crossed. The good news is that as a community, if not each individually, we have begun to cross some boundaries. For example, we have begun to research language learning as a complex dynamic system (Larsen-Freeman, 2012) and recognize that language education should be understood from an ecological perspective (Kramsch, 2008). SLA is being argued as a theory of practice (Hall, 1997). Efforts have also been taken to integrate approaches to language learning by bridging or crossing the boundaries between the so-called cognitive and sociocultural approaches (Atkinson, 2002; Douglas Fir Group, 2016; Hulstijn et al., 2014; Zuengler & Miller, 2006) and to deconstruct the traditional distinction between L1 and L2 for a "bilingual turn in SLA" (Ortega, 2010). Methodologically, it has also begun to be realized that the traditional boundaries between approaches – quantitative and qualitative – could and should also be crossed (King & Mackey, 2016), and mixed-methods research has begun to be underscored to bring new insights into the complexity of language learning and education (or applied linguistics) (Riazi & Candlin, 2014). The post-methods movement for language teaching has also been emphasized for researching, understanding, and innovating language pedagogies (Kumaravadivelu, 2003) by decentering any particular type of practice. Translingualism and translanguaging have also contributed to our understanding about the dynamic, fluid, and hybrid nature of language learning and use and have brought new perspectives for understanding and interpreting issues of language learning and education and the role of language in education (García & Li, 2014).

Crossing the myriad of boundaries, and decentering whichever zones that define us or are defined by us, as mentioned earlier, is challenging and can be risky (see Donato et al., 2014; Tucker, 2000b). Luckily, there are brave, successful, and expert boundary crossers that have reminded us of the importance of boundary crossing (e.g., Tucker, 2000a, 2000b), exemplified boundary crossing to us, and inspired and mentored us to cross multiplicity of boundaries. G. Richard (Dick) Tucker, Paul Mellon University Professor Emeritus of Applied Linguistics at Carnegie Mellon University, is a notable one of them (Donato, 2013). Few scholars have valued and exemplified boundary crossing and demonstrated extraordinary success in it in language education research, policy, and practice more than Dick, whose career of over half a century has contributed to shaping the field of what we now know as applied linguistics (see Tucker, 2000b). Dick's over 200 publications (see Appendix for a selected bibliography) and many other types of scholarly contributions have taught us the importance of "a language competent society," and exemplified to us the importance and possibility of boundary crossing for researching and understanding language learning and education and improving policy and practice.

Dick started his academic career in the 1960s. The earliest and most visible boundary crossing to begin that journey was perhaps his decision to leave the United States to do his MA and PhD in psychology at McGill University, Canada, which according to him was made because "I could play intercollegiate football there." At McGill University, where he was later a member of the psychology faculty and a Professor of Psychology and Linguistics, Dick, in collaboration with colleagues and graduate students, crossed many linguistic, disciplinary, and methodological boundaries and published a number of studies that laid the foundation for understanding language learning processes, bilingualism, and program innovation and language teaching. The most notable boundary crossing during his tenure at McGill University was the collaborative work he conducted with Wallace E. Lambert on what was later known as the St. Lambert Experiment, a 12-year longitudinal evaluation of the effectiveness of French immersion programs in Quebec, Canada (Lambert & Tucker, 1972). While the St. Lambert project exemplified many dimensions of boundary crossing in language education, the most salient was perhaps between research on bilingual learning and innovative educational practice (program development, implementation, evaluation, and bilingual education policy, particularly language immersion or dual-language instruction) in schools.

This Tuckerian boundary crossing was later carried on to the Foreign Language in Elementary Schools (FLES) project that Dick conducted with his University of Pittsburgh collaborator Richard (Rick) Donato, who also wrote a foreword for this volume. In that project that spanned over a decade, Dick and Rick, in collaboration with their graduate students (e.g., Chinen et al., 2003; Donato & Tucker, 2010; Igarashi et al., 2002; Mitsui et al., 2007; Tucker et al., 1996), implemented and assessed an ambitious, multi-year, articulated program that taught Japanese and Spanish to elementary school students in Pittsburgh, Pennsylvania. According to Donato (2013), Dick's "collaborative research in this area is the first to investigate empirically foreign-language learning in US elementary schools," and his studies "remain a primary source of information for school districts implementing foreign-language instruction across the grade levels" (p. 2).

The aforementioned boundary crossing between research and (innovative) practice is arguably only a fraction of the success that Dick has achieved. As evident in numerous "boundary objects" (projects, publications, presentations, policy engagements, leadership roles, etc.; Akkerman & Bakker, 2011), Dick, together with his collaborators, crossed a wide range of disciplinary, methodological, linguistic, institutional, programmatic, and national boundaries. The insights generated and discussed in his over 200 scholarly publications have convinced us that language

learning and education are complex systems that necessitate synergistic insights into operations across diverse levels, ranging from policy, system, and standards to program, curriculum, and pedagogy, and from schools, administrators, and teachers to communities, parents, and students (see the introduction of each subsequent part of this volume for further detail).

To highlight, Dick's research has been informed by and contributed to a wide range of areas of scholarship that underpin language education, including, but not limited to, sociolinguistics, psycholinguistics, language acquisition, language policy and planning, bilingualism and multilingualism, language assessment and program evaluation, and teacher training and education. Dick's research has also crossed many boundaries between paradigms and methodological approaches to understanding, interpreting, and debating language learning processes (cognitive, social, and affective), language teaching, and policies: quantitative and qualitative; experimental and observational; historical and discursive; attitudinal survey and skill testing; to name just a few. In the FLES project (Donato & Tucker, 2010), for example, students' Japanese and Spanish proficiency was measured and monitored across many years of the programs to generate evidence of language development or effects of the program and instruction. In the meantime, classroom teacher-student talk was analyzed through discourse analysis, and the perspectives of multiple stakeholders – students, parents, and teachers – were elicited through different methods (e.g., interviews and questionnaires) to generate insights into sustainable implementation of early foreign language programs and policy implications for a language-competent society.

Dick's scholarship has also crossed boundaries of contexts (e.g., institutional, national, sociocultural, political) and programs (e.g., traditional TESOL and foreign/World Language programs, foreign language immersion, and content-based instruction). During his tenure at McGill University, Dick concurrently served as a language specialist for the Ford Foundation and conducted a number of studies on language use, policy, learning, and language teacher education in many societal and educational systems, from Southeast Asia and the Middle East to North Africa. During his directorship of the Center for Applied Linguistics (CAL), Dick adopted a "broad worldview," over and beyond what underpinned his earlier scholarship on French-English bilingual education in Canada, to unravel "the emergent complexities of social policy and its relationship to second language acquisition in instructed contexts" (Donato, 2013, p. 2). He was also one of the four specialists who were sponsored by the US International Communication Agency and visited China to survey English teaching and teacher training there (Cowan et al., 1979). Dick contested the English-only movement in the United States and argued tirelessly for nurturing a language-competent society (e.g., Tucker, 1991, 1997). And together with his CAL colleague Jodi Crandall, Dick published a number of articles on language and content integrated instruction for language minority and language majority students in schools and universities (e.g., Crandall & Tucker, 1990; Tucker & Crandall, 1989).

Crossing linguistic boundaries also saliently characterizes Dick's scholarship and engagement in language education policy and practice. In addition to using bilingual/multilingual lens to unravel the complexity of language processing, learning, and education (e.g., Bruck et al., 1974; Tucker, 1998, 2001), Dick, together with his collaborators and graduate students, investigated the learning and teaching of diverse languages across national, institutional, and programmatic contexts and types of learners (e.g., school children vs. university students; language minority vs. majority students; heritage vs. foreign language learners). Those languages include Arabic, Chinese, English, Filipino, French, Hebrew, Japanese, and Spanish, to name just a few. During his tenure at Carnegie Mellon University (CMU), where he served multiple academic and

leadership roles before retirement in 2015, Dick also aimed to bridge language and global education for university students. He and his CMU colleagues outlined global literacy and argued for the cultivation of it in American university students in response to the multitude of challenges with which the world is faced today (Nair et al., 2012; Polansky & Tucker, 2018).

In addition to his distinguished research and scholarship, Dick also exemplifies the role of a boundary crosser in promoting communication between diverse stakeholders and communities for understanding the critical importance of language learning, bilinguality, and education. He crossed institutional boundaries (from policy-informing institutes to academic associations and from higher education to schools) and the boundaries between the many academic, educational, administrative, and leadership roles he served. While working at McGill University (1968-1978), Dick, as noted earlier, was concurrently a language education advisor for the Ford Foundation and conducted a number of studies on language use, policy, and education in Southeast Asia, the Middle East, and North Africa. After he left McGill University, Dick became the Director of CAL in Washington DC (1978-1992). During his tenure as Director, CAL established the National Network for Early Language Learning to promote foreign language instruction in elementary schools in the US. Under his leadership, the scope of the center was significantly expanded, the annual budget significantly increased, and staff nearly tripled. CAL later established the Tucker Fellowship in 1992 in honor of his distinguished service and leadership.

Dick joined Carnegie Mellon University in 1992 as a Professor of Applied Linguistics and became in 1995 the Head of the Department of Modern Languages, which now offers eight languages to CMU students (Arabic, Chinese, French, German, Italian, Japanese, Russian, and Spanish), 50% of whom (the national average being 9% per university), accordingly to a report of the Modern Language Association (MLA) in 2012, took at least one foreign language class while studying at CMU. Dick served as the Head of the department for 12 years, after which the Headship passed on to Susan G. Polansky, Dick's long-term colleague and collaborator (see, for example, Polansky & Tucker, 2018) and also the author of a foreword for this volume. Since 2007, Dick continued to serve multiple leadership roles at CMU until he retired in 2015 as "Mr. Everything" and the Paul Mellon University Professor Emeritus of Applied Linguistics.² These roles included, for example, the Interim Dean of Student Affairs, Associate Vice Provost for Education for Carnegie Mellon Qatar, Interim Dean of Carnegie Mellon University Qatar, and Title IX Coordinator. Dick received the Elliott Dunlap Smith Award from the College of Humanities and Social Sciences for distinguished teaching and educational service (1999), and later won the University's Doherty Award for sustained contributions to excellence in education (2007).

Dick has also crossed boundaries between professional associations or organizations with multiple leadership roles that facilitated research and communication on language learning, language teaching and program innovation, and educational policy. Among many other notable roles, Dick was a member of the Board of Directors of TESOL International Association (2003-2006), and is a foundation trustee of the International Research Foundation for English Language Education (TIRF), a nonprofit organization which, according to its position statement, gives "high priority to the development of a coherent program of language learning research, teaching research, and information dissemination." Because of his distinguished scholarship, leadership, and service, Dick won prestigious awards or recognitions from all major language education associations in the United States, including the American Association for Applied Linguistics

¹ https://thetartan.org/2012/12/3/news/foreignlanguage

² https://www.cmu.edu/dietrich/modlang/news-stories/2015/tucker-retires.html

(Distinguished Scholarship and Service Award; 2003), the American Council on the Teaching of Foreign Languages (Paul Pimsleur Award for Distinguished Research; 1997), and TESOL International Association (The James Alatis Award for Service to TESOL; 1998). He was also chosen by the National Association for Bilingual Education (NABE) as the "Honoree of the Year" (1995) for his "significant contributions to the body of research on language acquisition and the establishment of sound bilingual education programs."

3 Goals of This Volume and Contributors/Boundary Crossers

The goals of this volume are two-fold. Firstly, we aim to use original research papers from authors who are on the frontline of language education and research to explore, exemplify, and discuss boundary crossing, and through that boundary crossing to generate new insights that improve language education, policy and practice. Although there are several special issues of journals or volumes that shed light on paradigmatic hybridity for language education or applied linguistics research (e.g., Kostoulas, 2019), that focus is necessarily restricted with respect to the multiplicity of boundary crossing. Springer's multiple-volume Encyclopedia of Language and Education, for which Dick and David Corson (Tucker & Corson, 1997) edited the volume on second language education for the first edition, is perhaps the most ambitious project that shows the landscape of language (in) education and sheds light on boundaries for crossing. Yet, the entries in the volumes did not specifically intend to explore, exemplify, and discuss boundary crossing between languages, programs, contexts, learners, units of inquiry, etc. In this respect, the present volume fills a niche.

Secondly, we aim to honor Dick's distinguished scholarship on language education and pay tribute to his inspiration and mentorship that have encouraged and scaffolded our crossing of boundaries academically and professionally. Dick is an outstanding boundary crosser; a tireless advocate on what language learning and bilinguality mean to who we are as an individual, a community, and a society; an eminent scholar and professor; and an inspirer, role model, and selfless mentor to the contributors of this volume (and, needless to say, many others in the fields of language education and applied linguistics). The courage, ambition, and success of the path exemplified in Dick's career has inspired us, and will continue to inspire us, to cross boundaries to research and understand the complexity of language education and improve policy and practice.

The authors come from diverse backgrounds. They are from different places in the world (e.g., China, Israel, Qatar, UK, USA); they have taught diverse languages and speak and research even more, such as Arabic, Chinese, English, French, German, Hebrew, Japanese, Kannada, and Spanish, to name just a few; their contexts of research and practice – national, sociocultural, institutional, and programmatic – are also diverse. Their students and research participants also vary, ranging from language minority to language majority students and from linguistically and culturally diverse students to students in a traditionally monolingual setting, etc. Their research is informed by various theoretical perspectives and methodological approaches. Yet, they "cross boundaries" and come together for this volume because they are all, like Dick, boundary crossers in language education research and practice, and more importantly, because the lead authors all share the same path of receiving their doctoral degree from the PhD in Second Language Acquisition program at Carnegie Mellon University where they were taught, advised, inspired, and mentored (and continue to be mentored) by Dick. We view this volume as an outcome of our

collaborative action research, under the mentorship of Dick, to explore boundary crossing as language education researchers and language (teacher) educators.

4 Boundary Crossing Characterizing This Volume

Boundary crossing is characteristic in this volume of individual chapters and parts, and across these chapters and parts. For the *ad hoc* purpose of organizing and structuring chapters, we use four broad themes of language education to organize this volume into four parts, namely, language learning and development; teachers and instructional processes; program innovation, implementation, and evaluation; and language-in-education policy and planning. These parts or themes also cover the major areas of language education where Dick has made distinguished contributions. Specifically, boundary crossing is characterized in this volume in the following three ways (see Figure 1).

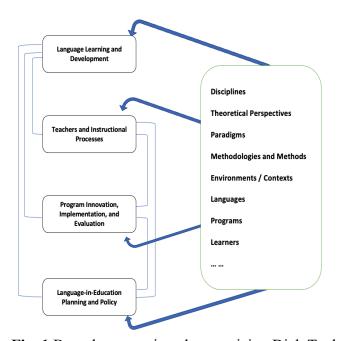


Fig. 1 Boundary crossing characterizing Dick Tucker's scholarship and this volume

First, while the four parts are separately presented, the themes are necessarily cross-cutting. In other words, boundaries are crossed between the areas of scholarship that often define our niche, scholarly identity. For example, research on teachers and teaching (Part 2) may be contextualized in the implementation of an innovative program (Part 3) or more broadly in shifting policies and may inform policy-related decisions (Part 4). Likewise, program evaluation (Part 3) may well involve collecting evidence on student learning and language development (Part 1) and classroom processes (Part 2). This type of boundary crossing is clearly exemplified in Dick's scholarship, as discussed in detail in the introduction of each part of this volume.

Second, the chapters that form a part, despite a shared focus on the broad thematic issue, approach that issue by crossing boundaries of languages, methodologies, programmatic contexts, and socio-political or educational systems, among others. For example, while all chapters of Part 4 focus on language-in-education planning and policy, they are informed by diverse theoretical

perspectives and/or adopt different methodological approaches to understanding the interplay of many micro and macro factors in different social or educational settings.

Finally, and most importantly, each individual chapter manifests boundary crossing within the chapter itself. For example, to address the complexity of language learning processes and development, a chapter in Part 1 may bridge theoretical frameworks, adopt cross-linguistic perspectives and designs, and/or "mix" methods. The most distinctive feature of this volume is that all chapters explicitly address and discuss boundary crossing, which may be either foregrounded and directly frame a study or, in a less direct way, be encapsulated in the discussion of the study and its findings where boundaries crossed are discussed to highlight the insights generated into language education.

5 Volume Organization and Introduction to Chapters

This introduction chapter (Chapter 1) is preceded by the forewords of Dr. Richard Donato and Dr. Susan G. Polansky on their respective journey of collaboration and boundary crossing with Dick. Rick is a Professor and was Chair of the Department of Instruction and Learning (now the Department of Teaching, Learning, and Leading) in the School of Education at the University of Pittsburgh and Dick's long-term research collaborator, notably in the FLES project described earlier. Susan had been Dick's colleague and co-author at Carnegie Mellon University and succeeded Dick as the Head of the Department of Modern Languages, a role she served until 2020. This introduction chapter is followed by the four parts, each beginning with an introduction that outlines what we call the Tuckerian impact and followed by four chapters. These chapters cut across themes of the parts and address, from different perspectives, boundary crossing in researching, understanding, and improving language education that emulates the Tuckerian impact.

The first part focuses on language learning and development. In the introduction, the boundary crossing exemplified in Dick's scholarship on language learning, learners, and bilinguality is presented, particularly his research that transcended boundaries of languages and language programs and the paradigmatic pluralism that he underscored for understanding the cognitive and social underpinnings of becoming bilingual and the educational implications of bilingualism and bilinguality.

In Chapter 2, Dubiner explores the intersectionality of language/bilinguality and ethnic and national identity, with a focus on narratives of adult Israelis who were born to immigrant parents right around Independence. The lived experience of those participants from different social and familial backgrounds showed how they crossed boundaries of home language and Hebrew in identity construction (diasporic vs. Israeli identity) during the country's revival of Hebrew as the national language.

In Chapter 3, Walter crosses linguistic, theoretical, and methodological boundaries, among others, to review grammatical gender across languages and the research on the acquisition of grammatical gender in L2 learners. The author also deconstructs the boundary between SLA theory and instruction and discusses how boundaries between pedagogies such as functional and sociocultural approaches can be crossed for the teaching of grammatical gender.

Chapter 4 addresses the interface between language assessment, acquisition, and use with a focus on L2 Chinese learners' pragmatic production. Li and colleagues contend that L2 pragmatic assessment often relies on expert raters and focuses predominantly on speech acts. This has constrained understandings about learners' real-world language use where non-expert,

native speakers are usually the interlocutors and "assessors." A study was thus conducted to cross boundaries by probing into non-expert raters' scoring behavior and cognition in assessing L2 learners' pragmatic production that included both speech acts and pragmatic routines.

In Chapter 5, Zhang and colleagues explore the complex interplay of factors that influence Chinese as a heritage language (HL) reading development. Their study found that HL learners' language and literacy experiences in the community had a more salient effect on their literacy development than those at home. It underscored the importance of crossing boundaries between learner-internal, resource factors and learner-external, socio-contextual factors for understanding HL literacy development and maintenance.

Each paper exemplifies overlapping yet distinct boundary crossing, which has contributed to our understanding about the complex process, and the meaning, of learning languages and becoming bilingual. Additionally, they cross boundaries of the thematic areas that form the parts of this volume. Chapters 3 and 4, for example, clearly inform language instruction and assessment (Part 2). Likewise, Chapter 2 touches on language, identity and nation building in a broad policy context (Part 4); and the findings of Chapter 5 also shed light on HL maintenance with policy implications (Part 4). Collectively, these chapters also cross boundaries of languages and contexts, as well as the boundary between theory and practice.

The second part focuses on language teachers and teaching, including teacher learning and professional development. The introduction presents the contribution of Dick's scholarship and boundary crossing to our understanding about innovations in language teaching and language teacher education. Among the many boundaries crossed (e.g., programs and national contexts, learners, and methodological pluralism for researching language teaching and teachers), highlighted is Dick's emphasis that language teaching is both science and art, and language educators need to be both a scientist and an artist to create an impact.

Chapter 6 focuses on K-12 English learner (EL) teacher education programs in the United States. Hamada and Miller, based on an examination of programs' offerings, compare the knowledge bases that different university-based EL teacher education programs draw on in the United States. They demonstrate how factors such as home department (language vs. education) and program level (baccalaureate vs. post- baccalaureate / master's) influence whether an EL teacher education program is more applied linguistics- or general education-oriented. The authors argue that programs should cross disciplinary boundaries to integrate research and practices from different fields for educating EL teachers in US K-12 schools.

Chapter 7 focuses on transcending the boundary between the teacher as a human mediator in dynamic assessment (DA) of student learning and the mediational role of carefully designed digital tools based on intelligent computing. Qin explores computerized mediation through DA to facilitate the development of the ability to comprehend implied meaning in L2 learners of Chinese. She discusses how computerized mediation tools can cross boundaries of learning environments and traditional teacher-student roles for ubiquitous learning of languages.

In Chapter 8, Gómez-Laich and colleagues aim to cross disciplinary boundaries between subject learning and writing in English for Academic Purposes (EAP) in universities with English as the Medium of Instruction (EMI). They report a study in which writing faculty/applied linguists worked in collaboration with information systems (IS) faculty and adapted the Teaching Learning Cycle to scaffold the writing of the case analysis genre in two IS courses in an American university in the Middle East. The authors also discuss the strategies they have used for promoting that boundary crossing.

Chapter 9 situates boundary crossing in a university-based Chinese as a Foreign Language (CFL) program in the United States. Liu aims to integrate visual arts into her own CFL teaching and explores the relations between humanities, art appreciation and creativity, and language education. This chapter reports on the author's effort to cross disciplinary boundaries and boundaries of instructional environments in her CFL teaching and presents a mixed-methods study that evaluated that effort with a focus on student motivation and perceptions.

Each chapter in this part exemplifies boundary crossing that contributes to our understanding about language teaching, teachers, and teacher education. The chapters also cut across the themes of the four parts. For example, Chapter 6, while focusing on disciplinary influences on EL teacher education, has implications for teacher education programs and the evaluation of these programs (Part 3). Likewise, while Chapters 8 and 9 have a clear focus on language teaching, they also explore students' language learning and use (Part 1) and generate insights into program innovation (Part 3). Needless to say, the four chapters collectively also cross boundaries of languages, programs and contexts, and research methods.

The third part consists of four chapters that focus on language program innovation, implementation, and evaluation, an area where Dick has made a highly distinguished contribution. Like the previous parts, this part first outlines the boundary crossing exemplified in the Dick's scholarship and discusses the Tuckerian impact. A very characteristic if not the most characteristic type of boundary crossing in program implementation and evaluation is that it is a collective enterprise, as has been underscored by Dick, that involves engagement across multiple stakeholders, such as scholars / evaluators, teachers, administrators, communities, parents, and of course students / learners.

In Chapter 10, Lü and colleagues contextualize their boundary crossing in different Dual Language Immersion (DLI) programs in the United States. They argue that even though evidence has been established on benefits of DLI programs on students' academic achievement, most studies on these educational benefits focused on Spanish DLI programs. The authors address this niche by analyzing the longitudinal data they collected from a Mandarin immersion program in urban California that enrolled ethnically and linguistically diverse students. Lü et al. found that students' math and English language arts scores showed significant growth over time and the trajectory of growth was not influenced by students' language background and race/ethnicity.

Chapter 11 underscores the importance of methodological hybridity and insights of stakeholders in curriculum/program evaluation and evidence-based language education policies and planning. Zhang and colleagues contextualize the discussion of boundary crossing in program innovation and evaluation in Singapore, where school curriculums are constantly reviewed and reformed to meet with the realities of the evolving sociolinguistic landscape and where they conducted a multi-year project to evaluate the Chinese Modular Curriculum in primary schools. The authors report their findings on teachers and students and discuss the interface between sociolinguistics, language policy and planning, and curricular/program innovation and reform.

Chapter 12 does not involve evaluation of a program or a national curriculum but focuses on innovation and implementation of study abroad (SA) programs, which were heavily impacted by the COVID-19 pandemic. Xiao and Nie conducted a questionnaire survey of American college students, the most important stakeholder of SA programs, to understand their perceptions of SA in academic study, willingness to study abroad, and the impact of SA (or potentially the lack thereof) on their career prospects and life during a time full of uncertainties. Students' insights

are discussed to help departments and SA program directors evaluate current curricular requirement and explore new, innovative models and practice.

In EMI universities, programs should aim for both disciplinary learning and professional communication skills in a discipline; yet, as Miller, Pessoa, and Kaufer point out in Chapter 13, boundaries often exist between *writing to learn* and *learning to write* views in program faculty. The authors argue for a writing as design approach to disciplinary writing instruction and report how this approach was exemplified in a business content course in an EMI university in the Middle East. They interviewed instructors and analyzed instructional materials and student writing, and, based on the findings, they make recommendations on how business programs can leverage a writing as design conceptualization to improve student writing and bridge any boundaries perceived by faculty (and perhaps students as well) between disciplinarity and rhetoricity.

The four chapters in this part, while each individually contributing to program innovation, implementation, or evaluation through boundary crossing, also cross thematic boundaries of the four parts. Chapters 10 and 11, while showing a focus on program evaluation, both have strong implications for language education planning and policy (Part 4). Chapter 10 also informs language learning and bilinguality (Part 1) and Chapter 11 also contributes to understandings about language teachers and teaching (Part 2). Likewise, Chapters 12 and 13 both shed light on curriculum or program policies (Part 4). The four chapters of course also collectively cross boundaries of languages, programs and educational contexts, research methods, so on and so forth.

The fourth part explores boundary crossing in language education policy and planning. Dick's publications on language education policy and planning and engagement in policy formulation, discussion, and debate are a very salient contribution of his to language education and applied linguistics. This is discussed in the part introduction. In particular, for boundary crossing exemplified in Dick's scholarship, the introduction highlights his global view on language education, bi-/multilingualism, and policy and planning. It is emphasized that this global view, or a view that transcends sociolinguistic, national, and educational contexts, is fundamental for us to understand the many micro and macro factors that interplay in policy formulation, implementation, and contestation.

Chapter 14 focuses on EFL learning and literacy in ethnic minority (EM) students who learn English as a third language in China. Ke first conducts a systematic review of relevant studies to identify the challenges EM students encounter in university EFL learning and effective models/programs/pedagogies for EM students. She then reports a study that compared the English literacy profiles of EM and Chinese-speaking Han-majority university students. Based on the review and empirical findings, Ke argues that EFL instruction for EM students needs to consider their varied backgrounds and linguistic repertoires and avoid deficit-perspectives, and calls for collaborative, integrated approaches to EFL policy and practice for EM students in multilingual settings.

In Chapter 15, using the metaphor of a "foreign bubble," Wang and Diao characterize international students' creation of an English-speaking environment for academic purposes in an EMI program in Shanghai, China. This English-speaking "foreign bubble," which appears to justify the students' avoidance of Chinese, however, is contested by other program stakeholders. The authors engaged with students, faculty, as well as staff of the program to unravel this unique policy context of language in education, which is being promulgated in response to China's goal

of internationalizing its higher education through EMI education and in service to the country's global strategies such as the Belt and Road Initiative.

A distinct focus of Chapter 16 is its global perspectives on language education, bi-/multilingualism, language policy and planning. Nakamura discusses how theoretical concepts of cross-linguistic transfer in bilingual reading development could and should be used to address urgent issues of socioeconomic advancement and educational access for all in the developing world. The discussion is situated in the complex reality that in many low- and middle-income countries (LMICs), which are also typically multilingual, the disparity between home and instructional languages has constrained literacy development, academic achievement, and socioeconomic mobility. With references to a range of multilingual countries, Nakamura discusses how "cross-linguistic reading transfer theory" is valuable for addressing issues of initial literacy instruction and transition to literacy instruction in other languages. The author also discusses the importance of stakeholder engagement and boundary crossing for applications of theory to policy and practice for improving literacy outcomes in low-resourced LMIC contexts.

Inquiries into language education planning and policy need to engage with policy contexts and stakeholders or actors. In this respect, the foregoing three chapters all cross the thematic boundaries of this volume, yet each provides insights into boundaries and boundary crossing in distinct ways, crossing boundaries of perspectives, languages, and methodological approaches. Chapter 14 shows a focus on language learning and proficiency in EM students (Part 1) and Chapter 15 teachers/faculty and programs (Parts 2 and 3). Chapter 16 shows a notable, global perspective. It cuts across the themes of all parts to show that policy and planning in language (in) education is a complex system that requires crossing boundaries between theories and practice; socioeconomic and sociopolitical dimensions of language education; program models and evidence-based innovation; and diverse policy actors.

6 Conclusion

Language education, like general education (Jacobson et al., 2019), is a complex system. Understanding the system and improving practice and policy require crossing diverse boundaries and decentering any particular disciplinary tradition, paradigm, or approach; language; learner; learning environment; programmatic, institutional, and political setting; so on and so forth. We hope this book has achieved its purposes of underscoring and exemplifying boundary crossing in language education research; honoring Dick as a distinguished scholar, expert boundary crosser, and mentor; and celebrating Dick's eightieth birthday and his commitment to language education research, policy, and practice for over half a century. We also hope that this book has shown the learning potential in boundary crossing for professional development of language education researchers and language (teacher) educators.

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Appendix G. Richard Tucker: A Selected Bibliography

This appendix presents a selected bibliography of G. Richard Tucker's scholarly works that have been produced from when he received his master's degree in psychology at McGill University in 1965 to around when he retired in 2015 as the Paul Mellon University Professor of Applied Linguistics Emeritus at Carnegie Mellon University. These works are selected from over 200 scholarly works that Dick has produced. We hope that this bibliography supplements the descriptions that have been presented in this chapter to show how Dick has crossed boundaries in generating insights into language education, how his scholarship has contributed to understanding and improving language education, and how his works have contributed to shaping the field that we now define as applied linguistics.

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