We'll Come Back
When You're Teaching

Examining the Need for Curricular Reform
in Higher Education in Response
to the Introduction of Transitional Kingergarten
in California's Public Schools

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Abstract

This study examines how, if at all, multiple subjects and administrative services credential preparation programs are changing in response to California's newest grade, Transitional Kindergarten (TK). We analyzed interviews from university faculty in early childhood education and credential programs in five institutions

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of higher education and collected survey data from early childhood professionals across 16 counties in the state. We describe gaps in knowledge about early childhood and developmental science needed to work with children in effective and developmentally responsive and appropriate ways. The study informs a much needed conversation about the consequences of implementing TK as a stand alone change rather than part of a comprehensive coordinated systems level reform.

Introduction

My classroom was humming with the sounds of engaged young children. Some were building with blocks, others were collaborating on an imaginary scene in the dramatic play area, and a small group was working with me on a measurement activity on the rug. My principal walked in with a group of administrators as part of our district's "instructional rounds." I have a master's degree in early childhood and know how to create a high-quality, developmentally appropriate classroom. However, my principal took one look at the children playing and loudly announced to the group, "We'll come back when she's teaching," and to my disbelief, she quickly marched everyone out of my classroom. (transitional kindergarten teacher in Northern California)

Principal leadership is second only to teaching in terms of impact on child outcomes. . . . These leaders may not have the knowledge base and skills needed to effectively provide instructional leadership and supervision for early childhood teachers. . . . [No] states—except Illinois—have included early childhood content specifically in their licensure, accreditation, mentoring or evaluation processes. (Connors-Tadros & Horowitz, 2014, p. 4)

The first eight years of life, starting in the prenatal period and extending through third grade, are a critical period that can influence children's development, academic achievement, and well-being over the course of their lifetimes (Center on the Developing Child at Harvard University, 2007, 2016; Institute of Medicine & National Research Council, 2015). It is now well recognized that 90% of children's brain development occurs by the age of 5 years (Casey, Tottenham, Liston, & Durston, 2005; Halfon, Shulman, & Hochstein, 2001), and investments in high-quality early learning programs result in the most significant return unparalleled by educational interventions at any other period in a child's educational trajectory (Heckman, 2008; Heckman & Masterov, 2007; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Heckman, Stixrud, & Urzua, 2006). Increased knowledge about the importance of the early childhood years along with a growing concern that the early childhood system in the United States is highly fragmented and severely underresourced have led to calls for early childhood systems reform across the nation (Daily, 2014; Kauerz & Coffman, 2013; Shonkoff, 2010; Early Childhood Comprehensive Systems, 2011). The goal of these efforts is to formally link early childhood education (ECE) with primary school, creating a coherent pre-K to third-grade continuum that is intended to align and coordinate high-quality preschool with

primary school education (Daily, 2014; Institute of Medicine & National Research Council, 2015; Kauerz & Coffman, 2013; Riley-Ayers & Costanza, 2014). System reform advocates have purported that increased coherence between early childhood and public school will serve as a powerful lever to attenuate our nation's persistent opportunity and achievement gaps (Alliance for Early Success, 2013; Kauerz & Coffman, 2013; U.S. Department of Education, 2016). Thus momentum is building to create "sturdy bridges" between early learning programs and elementary schools (Institute of Medicine & National Research Council, 2015; Riley-Ayers & Costanza, 2014). Such efforts are an ambitious undertaking given the significant differences between the field of ECE and public schooling, including their distinct histories and purposes, different funding streams, separate regulatory policies and governance structures, and significantly divergent workforce preparation requirements.

For most states, ECE systems reform initiatives are currently focused on creating linkages between preschool/pre-K programs and kindergartens, as kindergarten is traditionally the first year of public schooling, although attendance in kindergarten is only mandatory in 15 states (Education Commission of the States, 2016). California, in a policy decision that diverges from the national momentum to invest in expanding access to preschool programs, recently created a new grade, transitional kindergarten (TK), that was designed to be a lever for bridging ECE statewide with public schools (TKCalifornia, n.d.). TK enrolls 4-year-old children, who, in most other states across the nation, would be enrolled in preschool programs, in elementary school classrooms regulated by the policies and procedures of the public school system. The legislative author of TK and his supporters envisioned TK as a nexus of early childhood systems reform where high-quality, developmentally appropriate preschool education would be blended with kindergarten curriculum to prepare young children for the increasingly academic standards reflected in California's public school kindergarten classrooms. From a policy perspective, the ostensive goal of TK is to be a "sturdy bridge" for aligning and coordinating early learning with public schooling. Yet, policy implementation studies have suggested that the performative realities of new policies often diverge from policy makers' original intent (Spillane, 2000). As a result, the extent to which early childhood pedagogy and practices are truly being incorporated into TK classrooms across the state of California requires examination.

High-quality early childhood programs integrate curriculum, instruction, and assessment practices that are informed by developmental science and a deep commitment to the "whole child," emphasizing children's learning and growth across cognitive, social-emotional, and physical domains of development. This leads to an integration of play, observational-based assessment, close partnerships with families, and preparation of learning environments that are arranged to support children's construction of knowledge through experiential and play-based learning (Copple & Bredekamp, 2009; Follari, 2014). Few credentialed teachers and their elementary school principals have had course work or professional development

that explicitly provides them with information on child development or pedagogical content knowledge in early childhood. This is no accident, as only one state (Illinois) currently requires principals to learn about early childhood in their preparation programs (Brown, Squires, Connors-Tadros, & Horowitz, 2014). Furthermore, a wide variation exists across states regarding the content included in their elementary school credential programs, with some including information on early childhood and developmental science and the majority, including California, omitting this content (National Institute of Child Health and Human Development, 2006).

If few TK teachers and early elementary principals have formal training in child development and ECE, it is logical to ask how California's multiple subjects credential and administrative services credential programs are planning to adjust to be responsive to the introduction of TK. For TK teachers to create developmentally appropriate environments and their principals to act as effective instructional leaders for their TK staff, information about high-quality ECE should be incorporated into their credential programs. Continuing to leave out any information about early childhood in workforce preparation may result in TK, one of California's signature investments in statewide early childhood systems reform, failing to incorporate early childhood in any authentic or substantive way.

Given the rapid expansion of initiatives that are striving to link ECE with primary education across the nation, California's TK story has relevance for school districts and communities far beyond one state. The number of elementary school principals who have responsibility for supervising early childhood programs on their school sites or in the community is expanding rapidly (National Association of Elementary School Principals [NAESP], 2014). Given the rapid pace of children's brain development in the first 5 years and the decades of developmental science that highlight the need for early childhood environments to be structured very differently than classrooms for older children, teachers and principals must have opportunities to learn about child development and best practices in ECE in their teacher preparation programs. With this recognition, our study examines how, if at all, institutions of higher education in California are being responsive to the addition of TK and preparing future administrators and elementary teachers to understand the unique context of working with 4-year-olds in an elementary school setting. Two research questions guide this research: (a) Do faculty teaching in California's multiple subjects and administrative services credential programs have knowledge of child development and ECE? (b) How, if at all, are they incorporating information about child development and high-quality ECE in credential course work to prepare future TK teachers and/or principals responsible for supervising TK teachers? By examining these questions, we aim to contribute to the rapidly expanding national conversation about the complexities involved in linking early childhood more closely with public schooling, as an increasing number of school districts are doing across the country.

Literature Review

National Pre-K–3 Systems Reform

Decades of research have now established the link between high-quality ECE and positive outcomes for children, including benefits to later academic achievement (Heckman & Masterov, 2007; National Research Council, 2001). Given the increasing racial, linguistic, and socioeconomic diversity of young children and families across our country (Garcia, 2012), accumulating evidence of how school opportunities and achievement gaps are inequitably distributed across cultural, economic, and racial groups (Ryan, Fauth, & Brooks-Gunn, 2006) is fueling investment in the early childhood years. These patterns are pushing ECE systems reform to gain momentum in public and private sectors across the nation (Center on Enhancing Early Learning Outcomes, 2016; Jacobson, 2016; Reynolds, Temple, Ou, Arteaga, & White, 2011). Early childhood systems reform, variously named birth–8, 0–8, P–3, and pre-K–3, is built on the understanding that children's earliest years are critical for brain development, laying foundational cognitive skills, developing broader social-emotional competencies needed for successful relationships, acquiring communication skills, and establishing patterns of engagement for school participation and lifelong learning (Institute of Medicine & National Research Council, 2015; NAESP, 2011). Currently policy, funding, and programs for young children are represented across a complicated and disconnected web of governance systems, agencies, and organizations with little coherence or coordination (Kagan & Kauerz, 2012). As a result, at the heart of the ECE systems reform movement is a goal for equity-centered systems change where linkages, partnerships, and alignments are improved to increase system efficiency and to expand access to high-quality early childhood services for all children and families.

As 0–8 systems work spans across infant, toddler, preschool, and early elementary years, early childhood programs and public school districts engaging in this reform are tasked with complex work, including coordinating and aligning governance structures, funding streams, service delivery, and professional development efforts across contexts that are regulated by very different state and federal policy mandates (Kagan & Kauerz, 2012). Furthermore, images of children; understandings about how children learn and construct knowledge; discussions of the role of teachers, families, and the environment in children's education; and beliefs about how to assess children's skills, knowledge, and capacities often differ between the fields of ECE (birth–5) and public education (Halpern, 2013). Understanding these distinctions is a necessary beginning for any early childhood systems reform effort aligning early childhood with public schooling. Preparing elementary school teachers and administrators to work in a developmentally responsive manner with preschool-aged children requires that they have opportunities to learn about the theoretical perspectives, child and family-centered pedagogies, and empirical research that undergird the foundational beliefs and practices that are highly valued in the

field of early childhood. Identifying how, if at all, system reform efforts—like the addition of TK in California—are supporting preservice teachers and administrators to learn about the theories and practices at the foundation of high-quality early childhood classrooms is a primary aim of this study.

Foundations and Best Practices
in High-Quality Early Childhood Education

The highest quality early childhood programs reflect the foundations of social constructivism where children are recognized as competent individuals who continually construct knowledge about the world around them through inquiry, exploration, and discovery in the context of caring and attuned relationships with adults and other children (Copple & Bredekamp, 2009; Division for Early Childhood, 2014; Edwards, Gandini, & Forman, 2011; Follari, 2014). Developmentally responsive practice is central to high-quality early childhood programs, and it is based on knowledge of typical age-associated developmental progressions for young children coupled with an understanding of each child's interests, strengths, vulnerabilities, and needs. Developmentally appropriate practice incorporates children's self-initiated and adult-guided play as an important vehicle to support learning and development (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; Johnson, Celik, & Al-Mansour, 2013; Samuelsson & Carlsson, 2008). A significant element of early childhood educators' training is learning how, through play, children develop and integrate knowledge and skills across cognitive, social-emotional, and physical domains, including language and vocabulary; the foundations of literacy; social and emotional capacities, including self-regulation; scientific and mathematical thinking; creativity and problem solving; and fine motor and gross motor skills (Copple & Bredekamp, 2009; Johnson et al., 2013). Central to early childhood educators' professional knowledge is that children use play to organize their ideas, actively construct their knowledge of the world, and work through difficult feelings and stressful or traumatic experiences (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009). The integration of play as a foundational pedagogy truly sets ECE apart from primary school education.

Early childhood teachers expect individual developmental variation among children, and high-quality early childhood environments adapt the curriculum, routines, and instructional approaches to be inclusive of this natural diversity in children's acquisition of skills and developmental milestones (Copple & Bredekamp, 2009). Additionally, ECE has historically emphasized the neurobiological foundations of children's learning, focusing on psychosocial development (Halpern, 2013). This emphasis has led the early childhood field to prioritize health, social-emotional, and physical needs of young children and to work with families to support their young children's development of strong attachments and feelings of safety and belonging, laying the foundation for self-regulation, self-understanding, empathy,

and social skills (Bodovski & Youn, 2011; Halpern, 2013). Authentic assessment of a young child's learning often involves a multidisciplinary team of professionals where growth is documented through the use of careful observations on multiple occasions over time (Copple & Bredekamp, 2009; Division of Early Childhood, 2014; Snow & Van Hemel, 2008). This way of assessment diverges significantly from the use of testing with children in elementary schools. Another foundational aspect of early childhood pedagogy is the development of strong partnerships between teachers and families (Copple & Bredekamp, 2009; Derman-Sparks & Edwards, 2010; Division for Early Childhood, 2014; Halpern, 2013).

Supporting infants,' toddlers,' and preschoolers' learning and development is believed among experts in the field of ECE to require distinct approaches to curriculum, instruction, assessment, engagement with families, and learning environments that are strongly influenced by developmental science and a prioritization of psychosocial health over specific subject matter knowledge. Joining ECE and public schooling requires that elementary school teachers and their administrators learn how to integrate child development and early childhood knowledge and perspectives into their current public school practices. As Halpern (2013) explained, it is a "conceptual and operation integration" that is

> simultaneously about pushing the start of schooling down from kindergarten to preschool and about extending ECE up into the early grades . . . to foster an institutional context in which beliefs, assumptions, and practices from early childhood education and schooling would more readily shape each other. (p. 3)

Fostering institutional contexts where teachers and administrators have acquired the requisite pedagogical content knowledge to conceptually and operationally integrate ECE with elementary school should most logically begin during preservice credential program course work. Examining how these two fields can "readily shape each other" in the context of higher education is of particular interest to this study. As the next section highlights, there is an increasing need for elementary principals across the nation to learn how to effectively supervise early childhood programs.

Preparing Principals to Supervise Early Childhood Teachers

A recent survey reported that over 60% of elementary school principals are responsible for supervising preschool classrooms located on their school sites, or they have the responsibility for leading early childhood programs in their communities (NAESP, 2014). Furthermore, more than half of the surveyed principals desire professional development and resources that would increase their knowledge and capacity to supervise early childhood teachers and to understand the hallmarks of developmentally appropriate classroom environments. A specific request emerging from this national sample of elementary principals was an opportunity to participate in professional learning communities that improved their instructional leadership practice for pre-K–3 environments. The National Association of Elementary School

Principals (NAESP; 2014), the leading organization for elementary and middle school principals in the United States, has outlined six competencies that define "what principals should know and be able to do as effective leaders of PreK–3 learning communities" (p. 7). Specifically, they suggest that effective principals working with pre-K–3 teachers should (a) embrace the pre-K–3 early learning continuum, (b) ensure developmentally appropriate teaching, (c) provide personalized and blended learning environments, (d) use multiple measures to guide student learning and growth, (d) build professional capacity across the learning community (e.g., building knowledge about what is age and developmentally appropriate across the pre-K–3 continuum), and (e) make their schools hubs for pre-K–3 learning for families and the community. These are important goals, yet the knowledge is not widespread, and much work needs to be done to raise awareness in our principal training programs about the importance of education in the early childhood years. As NAESP (2014) stated, "despite the importance of leadership development in ensuring PreK–3 success . . . little attention is being paid to leadership development in PreK–3" (p. 4).

The current study was inspired by the NAESP survey results highlighting that over 60% of elementary school principals have responsibility to supervise early learning programs. We shine a light on principal preparation programs in higher education to see if and how faculty are responding to the increasing need for principals to learn about ECE in their credential course work so they are prepared to be effective instructional leaders in TK classrooms across California.

Policy Implementation

Scholars who examine the process of policy implementation have described it as a complex process that is strongly influenced by individuals' "sense-making" processes as they interpret a policy's messages, goals, and directives (Spillane, Reiser, & Reimer, 2002). Many factors mediate how individuals make sense of a policy, including their prior knowledge, attitudes, beliefs, values, assumptions, experiences, and motivations and the social context in which the construction of meaning related to the policy occurs (Markus & Zajonc, 1985; Spillane et al., 2002). This panoply of factors reflects why a single policy can be understood and responded to variously by diverse policy implementers working in a range of different contexts (Spillane et al., 2002). Spillane and his colleagues articulated the complexities associated with the process of policy implementation:

> A policy message about changing implementing agents' behavior is not a given that resides in the policy signal (e.g., legislation, brochures, regulations). Policy messages are not inert, static ideas that are transmitted unaltered into local actors' minds to be accepted, rejected, or modified to fit local needs and conditions. Rather, the agents must first notice, then frame, interpret, and construct meaning for policy messages. Conceptualizing the problem of implementation in this way focuses attention on how implementing agents construct the meaning of a policy

> message and their own behavior, and how this process leads or does not lead to a change in how they view their own practice, potentially leading to changes in both understanding and behavior. (p. 392)

Spillane et al.'s research highlights the significant influence that individual cognitions and situated cognitions have in the process of policy implementation. First, individual cognitive processes influence the policy implementation process because individuals assimilate new ideas (e.g., a new policy) within the schema of their existing knowledge. In doing so, they often eliminate key aspects of new information that diverges from their current beliefs. Thus policy implementers may take away superficial aspects of a policy message instead of the deeper aims intended by policy makers (Hill, 2001; Spillane, 2000; Spillane et al., 2002). Second, situated cognition impacts policy implementation because individuals respond to policies differently if they have the opportunity to engage in sense making with others, that is, participation in dialogue with others where they can co-construct interpretations of the policy message and the implications of the policy for their beliefs and professional practice.

Spillane et al.'s (2002) cognitive framework describing the complexities of the policy implementation process is used within this study to identify how higher education faculty are making sense of and responding to a statewide policy, that is, the introduction of TK as a new grade in the public school system.

Method

Research Design

This research project used a multiple case study with embedded units design (Yin, 2014). Cases were bounded by a single institution of higher education in Northern California (*n* = 5). Four of the case studies included embedded units defined as (a) ECE, (b) multiple subjects credential (MSC), and (c) administrative services credential (ASC) program faculty working at a college or university. We supplemented data collected from these case studies with an online survey sent to ECE professionals working across the state of California and four semistructured qualitative interviews completed with individuals working in the field of education whose work directly connected them with TK. The time boundaries for the study were from December 2014 to August 2015. The unit of analysis for all cases was an individual working in the education field.

Context

Transitional kindergarten. TK is a new grade in California public schools that was created by the Kindergarten Readiness Act (SB 1381), signed into law by Governor Schwarzenegger in 2010.[1] This act changed the kindergarten entry date from December 2 to September 1, mandating that all children must be 5 years old

to enter a California kindergarten classroom. This change was implemented over a period of 3 years beginning in fall 2012. Changing the kindergarten entry date resulted in a group of children who were no longer eligible to enter traditional kindergarten because their birthdays fell between September and December. TK was established for these children.

According to the California Department of Education (CDE; 2016), TK is "the first year of a two-year kindergarten program that uses a modified kindergarten curriculum that is age and developmentally appropriate." CDE clearly states that TK programs are not preschool classrooms; however, they are required to base their curriculum and instruction on preschool standards as evidenced in EC 48000(f) that states that "TK programs are intended to be aligned to the California Preschool Learning Foundations developed by the CDE" (CDE, 2016). From the beginning, TK was envisioned to be a bridge between high-quality early childhood (preschool) practices and kindergarten-level state standards. However, because TK is situated within the public schools and TK teachers are required by statute to have a MSC, preschool teachers are ineligible to teach in TK classrooms.

A significant challenge that school districts face with the addition of TK is that few credentialed teachers working in the elementary schools have had any course work or professional development that explicitly introduces them to either child development or developmentally appropriate curriculum and instruction for young children (National Institute of Child Health and Human Development, 2006). California's legislature is working to address this knowledge and skills gap. First, the government wrote an amendment to the Education Code (Section 48000[f]) to clarify that all TK teachers are required to use the California Preschool Foundations and Frameworks and to assess students using the Developmental Results Developmental Profile, an observational formative assessment instrument used throughout California preschools. Second, a bill (SB 876) was passed stating that all TK teachers hired on July 1, 2015, or later must either complete 24 units of early childhood and/or child development course work or have comparable experiences as determined by their employer by the year 2020. Third, an additional amendment was made to the Education Code (Section 48000[c]) due to the enactment of AB 104, the Education Omnibus Trailer Bill. This new law, effective July 1, 2015, permits Local Educational Agencies and charter schools the option of granting early admission to TK to children who would have otherwise been too young to attend a TK classroom. As a result, starting in the 2015–2016 school year, districts and charter schools were permitted to admit children to TK if their birthdays fell after December 2 but during that same school year as long as (a) the district or school determined it was in the best interest of the child, (b) a parent or guardian approved after being provided with information about the advantages and disadvantages and about the impact of early admittance, and (c) the district and/or school recognized that children admitted to a TK program will not generate Average Daily Attendance until they reached the age of 5 years or began kindergarten.

These legislative changes reflect that the creation of TK was not part of the larger comprehensive coordinated systems-level reform initiative. There was no initial funding set aside to update facilities to meet the unique needs of young children (e.g., access to bathrooms, smaller furniture), to outfit TK classrooms with developmentally appropriate instructional materials, or to provide the necessary professional development for teachers and administrators. Furthermore, the new statutes were not aligned with the state credential system or higher education course work designed to prepare our next generation of elementary school teachers and principals. As a result, there is likely to be an ongoing gap between what TK teachers need to implement play-based and developmentally, culturally, and linguistically responsive classrooms that are effective for their youngest students and for their principals to act as effective instructional leaders.

Participants

Interviews. A total of 17 individuals were interviewed for this study (see Table 1). The largest group ($n = 13$) represented higher education faculty (ECE, MSC, ASC, and/or educational leadership) working at six institutions of higher education—both private and public—in Northern California. Other professionals interviewed were working in the area of early childhood policy systems reform, including on the topic of TK. These participants included ECE policy professionals, a private foundation officer who funds professional development for TK teachers, and a private school principal responsible for supervising a TK classroom.

Survey. A total of 84 participants completed the survey. The sample was 95% female ($n = 77$); predominantly White ($n = 47$; 58%), Latino ($n = 13$; 16%), or Asian/Pacific Islander ($n = 8$; 11%); and highly educated, with 55.6% reporting having completed a master's degrees ($n = 45$). Participants represented 18 of the 58 counties in California: Alameda ($n = 26$), Fresno ($n = 11$), San Bernardino ($n = 9$), and Contra Costa, Del Norte, Madera, Plumas, San Mateo, Siskiyou, Sonoma, Sutter, Tulare, and Yuba counties ($n \leq 2$). Survey participants self-identified with a diverse

Table 1
Qualitative Interview Participants

	n
ECE higher education faculty	3
ECE/MSC credential faculty	4
ASC and educational leadership faculty	6
ECE policy professional	2
ECE foundation officer	1
Principal	1

Note. ASC = administrative services credential. ECE = early childhood education. MSC = multiple subjects credential.

range of job titles in early childhood, including site supervisors/directors ($n = 28$), preschool teachers ($n = 16$), professional development provider/coach ($n = 11$), and higher education faculty (n = 10), in addition to county School Readiness Coordinators, early interventionists, family child care providers, resource and referral and child care planning council staff, early childhood special education, infant–toddler teachers, TK and kindergarten teachers, and community college faculty.

Data Collection

Semistructured interviews. Early childhood faculty were asked to discuss what they believed to be foundational knowledge to successfully teach in early childhood classrooms and the types of information and experiences they thought were essential to include in preparation programs for TK teachers and for the principals responsible for supervising them. Faculty working in MSC and ASC programs were asked to discuss their knowledge of child development and/or ECE, the early childhood content they currently include in their credential course work, any barriers preventing them from including early childhood content in their programs, and changes they had made or were planning to make to their preparation programs in response to TK. All interviews were audiorecorded and transcribed in full.

Electronic survey. The electronic survey included six open-ended questions identical to those in the semistructured interviews for early childhood higher education faculty with the addition of demographic questions (i.e., age, race/ethnicity, highest level of education completed, current position). Survey items asked participants to list key topics in child development that principals need to know, recommendations for important readings, theories, activities and assignments to support TK teachers and principals to learn about ECE, and their definitions of "school readiness." Surveys were completed using SurveyMonkey and circulated widely through e-mail, drawing on the research team's professional network across the state.

Data Analysis

Survey and interview data were entered into ATLAS, a qualitative data analysis program. Analysis of the data included the iterative processes described by Saldaña (2013) as first- and second-cycle coding. To begin, the first three authors analyzed the data using inductive descriptive coding to determine broad topics (e.g., "assessment," "beliefs about play," "role of families," "subject matter: language and literacy," "influence of policy") and in vivo coding to capture participant-generated language ("holding child development at the center," "emotional safety at the core," "understanding the stages of development," "if your students know how to read, all of the other issues will be taken care of," "pre-reading skills . . . the most significant in those early years," "classroom management strategies," "not so much developmental theory there," "distinctly different experience"). Versus coding was used to

capture distinctions found in the data between early childhood and public school practices ("teacher education versus early childhood development," "developmental continuums versus standards and benchmarks," "regular multiple subject credential versus a distinctly different credential"). Data were coded for interrater reliability with 100% agreement for 50% of the data to ensure alignment in the understanding of the definitions for each code listed within the coding manual. Next, the first and second authors independently coded the remainder of the survey data and met on four occasions to conduct interrater reliability checks and to discuss any discrepancies. Again, reliability was high (consistently 90% or better), bolstered by the extensive work done to ensure understanding of the definitions of each code. Following this process, the first four authors worked together to complete several second-cycle code processes. This included code mapping and focused coding to reorganize initial codes into higher level categories to reflect the central themes in the findings, for example, image of the child, role of the teacher, ECE as a profession, or performative gaps in systems reform (Spillane et al., 2002). Another process conducted was code landscaping, which involved constructing word clouds to reflect distinct discourse choices among ECE, MSC, and ASC faculty. Some of the salient distinctions in these clouds included such terms as *child-centered* or *play-based* discourse from interviews with early childhood professors and *math methods* and *accountability pressure* reflecting phrases uttered by credential faculty.

Limitations

This study is limited by the size and geographic concentration of higher education interview participants as well as the predominately White group of early childhood educators who participated in the survey. These demographics do not reflect the staffing patterns of early childhood programs in general and may account for the omission of important content in high-quality ECE practices from being mentioned (e.g., dual language acquisition and culturally responsive teaching practices). Furthermore, all MSC faculty who participated in the study had backgrounds in ECE, but this may not be the case across the state. Our study provides an important contribution to the literature that has generalizability within our data set while also bringing attention to the need for more extensive research that gathers similar data from constituencies across the state.

Findings

Early Childhood Faculty and ECE Professionals

Little children are such enthusiastic learners and so, to think about what kind of curriculum, what kind of context and what kind of a structure should be in place that builds on, rather than squelches that . . . they need to know that learning is collaborative, learning is constructed . . . [we need to] keep in mind what strengths

and competence children have already shown so that you can build on those. (Sofia, ECE professor)

ECE faculty members' and ECE professionals' recommendations about ECE content that should be included in MSC and ASC programs. When we interviewed ECE faculty and surveyed early childhood professionals across the state, it was not surprising to find that their recommendations largely aligned with our literature review on best practices in the early childhood field. The top five themes that emerged in the survey data included understanding (a) social-emotional development ($n = 38$), (b) child development ($n = 35$), (c) child-centered instruction ($n = 29$), (d) play ($n = 28$), and (e) developmentally appropriate practice ($n = 24$).

Interview data reflected similar topics. Joanna,[2] an ECE professor, emphasized the significant differences when teaching young children:

> It isn't that the TK children are a year younger, or two years younger, but they are *qualitatively different*, so I would like TK teachers to have a better developmental perspective on the children's developmental needs . . . you can't take a curriculum and say, okay, this curriculum, what will it look like at age 3? . . . It has to be a completely different curriculum that supports what that development looks like at that age.

Joanna believed it was critical that TK teachers and their principals learn about neurocognitive research, interpersonal neurobiology, attachment theory, and the critical importance of early relationships and adult–child interactions as building foundations for children's development. Furthermore, she explained that TK teachers need to understand executive functions, how language supports self-regulation, relational trauma and the process by which children get triggered in classrooms, and how adults should respond when they do. Without this comprehensive knowledge of child development, she wondered, how would an observer know what they are seeing in young children's learning and behavior?

Another ECE professor, Crystal, described the need to look at children in a more holistic manner to understand the role of social, emotional, and physical development in children's learning. She explained:

> I am really worried that there will be many TK children and especially, if they are in low funded areas like in urban settings, who will be asked to sit down to learn, versus being encouraged to move and play. . . . I would really want principals to value and to know about the critical importance of play. . . . We can't just think that children are going to access content by sitting down and listening. They have got to be activated in different ways, so through music and through the liberal arts.

Antonia, a policy and advocacy professional working in ECE, explained that one of the biggest questions implementers of TK across the state asked about is how to use the state's observational-based assessment, the Desired Results Developmental Profile (DRDP), to monitor children's learning in a classroom and

how the results can inform teachers' instructional practice. Helping TK teachers learn "to really use observation, and to respond to each individual child's needs and learning in any given moment," is a significant challenge, as this is not built into their credential programs. Dahlia, a grant officer in an education foundation funding ECE initiatives, reiterated this as significant:

> The way teachers teach in ECE is very different from the way teachers are teaching in K–12 and there is a worry with TK that it is going to be K–12 pushing down the teaching paradigms, as opposed as to kind of "pushing up" . . . what is happening in early education and bringing it into TK.

Dahlia suggested that the use of the DRDP was one way to accomplish the goal of "pushing ECE up" into the public schools.

ECE professionals provided several recommendations for supporting candidates in the MSC and ASC programs to learn about early childhood. Many recommended accessing resources provided by the National Association for the Education of Young Children,[3] getting explicit training on the use of observational assessment in classrooms, and participating in observations within high-quality ECE classrooms followed by reflective dialogue with ECE teachers and directors.

Multiple Subjects Credential Faculty

> If our students go teach in kindergarten classrooms, they are not going to be provided a lot of time for play. They are going to be having them learn how to count to one hundred and learn how to get to level C or D in reading that they are expected to have by the time they enter first grade, which is ridiculous. . . . I know what expectations the teachers are going to face when they get into the classroom—first year teachers, and they are really intense. . . . I feel like teaching them to do otherwise is not really preparing them for the job that they are going to have to do. (Adrianna, professor, MSC program)

MSC faculty members' knowledge of child development, best practices in ECE, and/or experience working in the field of early childhood. We found that all of the MSC faculty we interviewed had some knowledge of child development and/or ECE, and two of the three had experience working in early learning programs (birth–5). For example, in addition to her MSC credential, Lucia completed a master's degree in ECE, completed student teaching with infants and toddlers, and worked in preschools for a year and a half. Alex had experience as director of several preschool arts-infused programs, and Marianna had 12 years of experience teaching in kindergarten and first grade.

ECE best practices included in MSC programs. One program did not include any child development and/or early childhood content in its MSC credential course work. Lucia and Alex, who worked at this institution, reported that there was no early childhood content in any of the courses in their MSC credential program. At Marianna's university, the MSC candidates did take one course on developmental

theory in their first semester that had a heavy emphasis in early childhood. She clarified, however, that this did not continue into any of their content courses that were required for their credential. She explained, "Now that you mention it, there is not a lot of emphasis on different levels of development in the understanding of mathematical concepts. So, no, [we don't include ECE]."

The third MSC program interviewed very intentionally chose to include early childhood content in its MSC course work. Edward and Claire, colleagues who teach at this higher education institution, explained that in response to TK, they are "not waiting for the state to change credentials." Instead, they are proactively working on creating a new strand to their MSC program that would explicitly emphasize ECE (birth–5) in the content and methods course work for candidates interested in working with early elementary grades (TK–second grade). Claire explained:

> The issues of cognition and emotional and physical development are a bit different in early development. The idea is to be able to provide a completely different experience for people who are particularly interested in teaching in the primary grades. . . . We will cover first and second language acquisition for 0–5, a little bit of literacy for preschool, more literacy for TK, and then on up to second grade. . . . An ECE focus will also be integrated into our math and science methods classes. . . . We have to revise some classes and create a couple of new classes. . . . We are choosing instructors who know early childhood and making sure to work with them so that they understand that we are teaching this differently than the traditional credential program.

As evidenced in this response, Edward and Claire believed that emphasizing early childhood in the content and methods course work of their MSC program required a substantial revision; in fact, they determined it would require its own strand of adapted and additional course work. They were planning to provide a "completely different experience" for educators planning to work in early childhood classrooms (pre-K–second grade), a significant contrast with the two other MSC programs where faculty reported little to no attention to child development and early education content.

ECE content MSC faculty believed was important to include in elementary credential programs. Given their background knowledge of ECE, it was not surprising that MSC faculty interviews reflected their understanding of child development and quality early childhood learning environments. For example, Lucia emphasized the need to learn about the role of play in children's education and what she perceived to be a disconnect between grade-based benchmarks in public schools and individual children's developmental processes:

> In our accountability-driven world, thinking about where play fits into the learning and development . . . attending to the social and emotional needs of students. . . . The disconnect . . . between development, developmental continuum, and then the ways in which we have particular benchmarks about where kids are supposed to be, in literacy or in math development . . . there is a mismatch between those benchmarks

and what we know about developmental processes and I think that would be something that would hopeful for teachers and leaders of schools to kind of understand and have a more nuanced appreciation of.

Alex echoed similar concerns and desires in what he discussed as his "wish list for principals . . . understanding the developmental stages of children at different ages. . . . What I would like to see are principals who advocate for curriculum that is appropriate for students' developmental learning stages." Marianna emphasized the importance of play and developmentally appropriate learning environments and the pressures for achievement that are leading to many negative consequences for young children and their teachers:

> When you have 4- and 5-year-olds in the kindergarten classroom and they are not allowed to play, or not allowed to interact, by the time they get to first grade, they don't know how to work together and they are fighting all of the time and you are just trying to make group work possible. But then you have all of this back work on how to work with people, or how to play games with each other or how to treat each other or how to take turns. . . . It is all getting lost in this push for more achievement sooner or more ability to memorize things sooner, or read sooner, or write sooner. . . . There is developmental theory for a reason and we can push kids to develop those sooner, but at the loss of other things. . . . The social aspects of learning are so important. I just think a lot of principals don't understand that at all.

Edward and Claire described the importance of understanding the role and history of play, different curricular approaches used in early childhood, and assessment practices that are appropriate for young children.

Barriers that MSC faculty reported prevented them from including ECE content in their credential course work. Despite MSC faculty members' knowledge of ECE and their expressed desire to see this content included in their MSC programs, they reported a number of challenges that prevented them from doing so. Lucia explained that her department's strategic plan had not identified programmatic connections between ECE and MSC programs: "There isn't a clear articulation in our department in the connections between teacher education and early childhood development." She also explained that although she knew the urban school district in the community where she worked was engaged in ECE systems reform, she had little knowledge of how the linkages to early childhood were being integrated into the daily practice in teachers' classrooms. This created a challenge for her to bring early childhood into her college course work. She explained:

> I know that the [district] is doing this [early childhood] work. However, I am not totally familiar with what it looks like, so I feel like I would need to be grounded in actually what is happening in practice right now—both in implementation . . . also in policy, to be able to speak to it.

She explained that her credential program would benefit from including develop-

mental science in methods courses preparing teachers to work with children across all of the elementary grades, not just TK:

> I would love to discuss TK in our program. I mean, I really would. I think it is a really important thing to discuss, but . . . our program tends to not do as good a job for kindergarten through second grade, as it does with third grade through high school. . . . So, I don't even think it is just a more thoughtful conversation about TK. I think it's a more thoughtful conversation about the early grades in general. . . . I feel like developmentally there is so much happening between zero and eight. . . . But those kinds of conversations require a certain level of understanding and expertise that most of us [MSC faculty] don't have.

Marianna made the same argument, stating that her MSC program needs to be more "purposeful about talking about development in general." However, having just recently completed 12 years of teaching in the public schools, she described a critical barrier interrupting the inclusion of ECE content as "pressure" in the schools to push academics early—something that she is preparing her MSC candidates to do, even though she believes it is not in the best interest of the children they will teach. She described the tension and ethical compromises she found herself negotiating in the college classroom with her MSC credential students:

> It is really hard . . . the pressure in the schools and in the school districts . . . being able to do all of this academic work really soon, and really early, and how do you make that happen? So, helping teachers figure out how to make that happen feels like a big piece of the work, when that is not an appropriate thing to be happening. . . . So, it is really hard to justify. . . . I only know this because I just came from there [the school district], where there is all of that pressure . . . the reality is, if I go into my kindergarten classroom with all of this play theory and wanting kids to engage with each other, I am either going to get reprimanded or get a bad evaluation, but I am definitely going to get redirected and then I am going to feel like I don't know what I am doing. So, we can easily prepare teachers to do that kind of work but what has to happen is there has to be a space for that work to happen. I don't think first year teachers have a voice to make that happen. I mean, eventually, 3 or 4 or 5 or 6 years later, they could probably work toward that kind of change, but for brand-new teachers, they just have to be able to do the work. And if the work is pushing kids beyond their limits, then that is what they have to do.

In both cases, the MSC faculty, despite having personal knowledge and experience with child development and ECE and valuing its inclusion in their course work, felt little agency to include this content. The reasons were variable, including a misalignment with department policy ("no programmatic connections with ECE in department strategic plan"), their own personal lack of knowledge ("I don't know what is actually happening in practice right now"), or the current sociopolitical context of schooling where teachers had to push kids "beyond their limits" in ways that were incongruous with their own beliefs. What was shared by all of the MSC faculty were two beliefs: that ECE content should be included in their

course work and that they did not have the power or agency to be responsible for this shift on their own.

Administrative Services Credential and Educational Leadership Faculty

> State credentialing hasn't acknowledged ECE in any way. Or TK. It has had zero impact on the administrative credentialing. . . . School starts at 5, still. (Noelle, ASC professor)

ASC faculty members' knowledge of child development, best practices in ECE, and/or experience working in the field of early childhood. The ASC faculty we interviewed all shared enthusiastically that they had background knowledge in early childhood and experience working within the field of ECE. However, when they spoke about ECE, they were referring to their prior experiences teaching in the early elementary grades (K–2) or about their personal experiences parenting young children. No one discussed having any course work or training in child development or early childhood instructional practices for children aged birth to 5 years. For example, Roy explained that he was a former kindergarten teacher and had focused on early childhood, "I mean like elementary age." Jenna similarly explained that she had begun her career as a kindergarten teacher. Noelle described her connection to ECE as twofold: first, as a parent, "One would be my experience as a mother, so that is very practical"; and second, as a former principal who had a preschool co-located on her school grounds, although it was overseen by a district ECE site supervisor. Describing her experience in early childhood, Natasha explained that she was the chair of the Board of Directors for her child's preschool, managed nutrition for a child care center, and conducted seminars for early elementary teachers. Leah was the only ASC faculty member who had worked with children younger than 5 years, explaining that she started her career working as a teacher in a Head Start preschool program.

ECE content ASC and educational leadership faculty believed was important to include in elementary credential programs. None of the ASC faculty interviewed said that they included early childhood content in their principal preparation programs. When asked how ASC course work at his college was adapting in response to TK, Edward replied, "It's not. I don't think it is on their radar at all." Similarly, when queried about whether they believed they were providing future principals adequate training to supervise early childhood teachers working in TK classrooms, Leah's answer was, "No. I really don't," a commonly shared admission among ASC faculty. However, Jenna reported that she was working with a colleague who taught ECE and MSC course work to develop a TK handbook—a resource she described as a "reader's digest for school leaders" that provided a summary of relevant research and information on "what a leader needs to know about transitional kindergarten in order to support teachers." Jenna also mentioned that she does show her students one video of children in an ECE classroom filmed by a California State University ECE

professor to discover, "Oh, these are the same kids . . . it really helps them to [see] the continuum . . . that it's all part of the same work."

When asked what, if any, ECE content the ASC/educational leadership faculty believed should be included in ASC credential programs, several emphasized reading. Leah shared, "I think they should have a basic understanding about how kids really learn how to read . . . [and] the kinds of activities that are so important for them to have prior to coming to school, the importance of music, language . . . the rich kinds of books that should be available to kids." Similarly, Noelle—reflecting back on her time as a public school administrator—explained, "My big focus was always reading as an elementary principal, so I wanted to really look at the pre-reading that was going on in this preschool program, and how it matched up to the pre-reading we were doing in kindergarten." Noelle also talked about teaching "kids to care" with "older kids mentoring the little children" in reading programs. Roy extended beyond reading to include social-emotional skills and children's play; however, his discussion was framed within the traditional public school discourse of measurement and outcome metrics:

> Anyone who is working with early childhood needs to be really clear about what the outcomes are for teachers. . . . We work in a society right now in school systems where everything is high stakes, so I think there is still very much a push that, if my child is not reading by the end of kindergarten, there is some level of failure, or if they are not writing in a certain way by the end of kindergarten even . . . it's not just about academic reading, what are the social-emotional scales we are building on? What do those outcomes look like for our transitional class or kindergarten class? . . . If play is part of the lesson, what are you observing? That conversation needs to be had, so that you are clear on that before you go in.

As reflected in these comments, the sociopolitical context of public schooling was a framework that influenced the ASC and educational leadership faculty members' perspectives when discussing early childhood content. The strong emphasis on reading in elementary school, the language of "high stakes," and the emphasis on designing metrics to track, measure, and report student outcomes are all reflective of a discourse that is drawn from public school—versus early childhood perspectives. The focus on evaluation of children's learning and progress using scales and metrics and the role of the teacher to "push" toward universal academic outcomes at one period in time (e.g., reading by the end of kindergarten) diverge significantly from developmental science and best practices in ECE.

Barriers ASC and educational leadership faculty report that prevent them from including ECE content in their credential course work. The fact that ECE content was not included in the ASC administrator preparation programs was not an indication of faculty members' lack of support for the idea. Professors in the ASC and educational leadership programs had an extensive list of barriers they perceived as preventing them from including ECE content in their principal

preparation course work. Noelle explained that the most significant barrier was the lack of formal recognition of ECE within the state credential system:

> Within the credentialing standards, there is nothing about early childhood. . . . So, there is no demand from the state. And those standards are so expansive now, it is really difficult to cover them all in one year. So, adding something is really hard. . . . We just got new standards . . . and there isn't one standard around understanding of ECE. One big change that I would recommend happening is that there should be a standard in the administrative credential around early childhood. . . . Until that happens, school administrators aren't going to be exposed to that in their training.

Natasha also emphasized that adding ECE content would be "ideal," but not "practical," given the need to keep the tuition costs down for students:

> We would love to do that. Practically, I am not sure we could have managed it . . . 36 units in 13 months. . . . [The ASC program is] constructed so they only have to take on one year of full tuition . . . because the financial burden of a 2-year program with people who are working and might already have college loans and with their own children in college was too much. . . . So, ideally, that would be terrific, but practically, you know, I wracked my brain about this many times. It's not like I haven't thought about this before.

Jenna described No Child Left Behind's (NCLB) focus on instructional leadership and improving students' test scores as a barrier, as testing is not a practice recommended for young children. She explained:

> NCLB kept us so focused on K–l2 assessments, because it was all about the testing and everybody was running around, and so we were already working with leaders thinking about what is high-quality instruction, and a good place for students to be . . . so bringing in an early childhood lens was difficult.

She contrasted this with the current policy focus on the Common Core State Standards, a change that she believed provides an opening for a bridge to ECE: "What I see now is an opportunity with the Common Core to think about, in my terms, the whole child." However, she suggested that despite having this opportunity to forge connections, ASC faculty are not currently perceiving it to be their responsibility to integrate information about ECE. She explained, "There is still this sense that this is *somebody else's work*." Thus we see in Jenna's response that not only is she not using the Common Core as a lever to bridge her course work with ECE—despite seeing the potential to do so—but she does not observe any motivation among her fellow colleagues to do so either. Her suggestions that this is "somebody's else's work" reflect a decoupling of responsibility for ASC/educational leadership faculty to integrate ECE content into principal preparation course work—bifurcation that allows early childhood to be signified as valued but not pragmatic.

Several other barriers were named. For example, Natasha described the small

number of students who enter ASC programs interested in leading early childhood programs as problematic: "We didn't have that many pre-K people . . . so probably with the 400 people I worked with, there were maybe 5." Jenna suggested that many of her students do not have access to a TK site where they can observe and learn about quality early learning environments: "So, that is something I am working on. . . . The students are from all over the Bay Area and there is no guarantee that there is an easy place [to observe in a TK]." Noelle explained that beyond curriculum, instruction, and assessment knowledge, courses on public policy and school finance would need to be restructured to include information relevant to ECE; yet few instructors who teach those courses would have the necessary background knowledge given the significant differences between ECE and school budgeting. She explained, "You know, in the public school finance courses in our credential program, we are not teaching the preschool funding model . . . yet most principals are unaware that the way preschools are funded is so radically different." Finally, Jenna reported that bridging early childhood and public school systems is reliant on the vision of district leaders, including superintendents.

The ASC and educational leadership faculty articulated a range of barriers that posed significant challenges preventing them from being able to include early childhood content in their credential course work. Although some were related to systems-level challenges, including current credential requirements and the shortage of available TK sites for observation and student teaching, other barriers were more tethered to their personal investment, or lack thereof, in the goals of TK. For example, the need for faculty to expand their personal knowledge of ECE and the substantive time required to complete course revisions to include early childhood content did not emerge as a high priority for these ASC faculty. This is not surprising, as integrating ECE into credential programs is not currently mandated nor incentivized in any formal manner within the state of California.

Discussion

> For almost a century, ECE and schooling, as social institutions, have been about different things. The ways in which each viewed and thought about children and about learning differed in important ways, notably in how children learn, how they acquire knowledge and understanding, the social conditions under which they learn best, how to think about and measure what children know and can do, responsibilities to families, and the principal work of teachers and other caregivers. ECE historically saw a more active, "constructive" child learner than did school. It was more supportive of cooperative learning; treated domains of knowledge in a more integrated manner; and placed greater store in play as an important vehicle for learning and growth. ECE historically was primarily a psychosocial, rather than academic institution. (Halpern, 2013, p. 4)

There is growing popularity across the nation to join the world of early child-

hood and primary school education with aspirations that this move will increase the quality of early childhood programs and services, professionalize the early childhood workforce, and attenuate trenchant opportunity and achievement gaps for students (Halpern, 2013; Riley-Ayers & Costanza, 2014). Described as early childhood systems reform, these initiatives have been hailed by a diverse collective of stakeholders across the United States. Despite the growing enthusiasm for these reform initiatives, early childhood and public schooling have very different histories with distinct governance structures, funding streams, policy levers, workforce requirements, and pedagogical roots. As a result, connecting these systems, given their few points of alignment, is fraught with complexity. Undeterred by such knotty work, policy makers, funders, and educators are moving ahead, incentivized by aspirations that workforce conditions will be transformed, educational quality increased, and child outcomes improved. Yet, to be effective, early childhood system reforms must actually emphasize changing systems. The consequences of change efforts being too narrowly focused were evidenced in this study. As conceived and implemented, TK was a siloed reform effort—a legislative action taken without consideration of complementary changes needed for its long-term success, including preservice course work for future teachers and principals who will teach and be responsible for instructional leadership in TK classrooms across the state.

California's commencement of TK was the outcome of a policy with ostensive goals to blend and braid developmental science and high-quality early childhood with public schooling. As TK was designed through a legislative process that narrowed in on cutoff dates for kindergarten instead of a comprehensive approach that coordinated the introduction of TK with aligned changes in governance, funding, instruction, credentialing, and professional development, its examination provides an instructive example to spotlight the potential hazards of coupling early childhood more closely with public education. As Halpern (2013) warned, early childhood systems initiatives could simply end up "making ECE less early-childhood like" (p. 23). This will certainly be the case if early childhood educators face pressure to make their programs resemble elementary school classrooms or risk being marginalized like the TK teacher in the opening vignette, whose professional knowledge and expertise in early childhood were not even acknowledged by her principal as "teaching."

Our study documented that early childhood professors and ECE professionals in the field were united in specifying the tenets of high-quality early childhood practice. They underscored the importance of understanding neurobiological foundations of learning and behavior; the holistic, dynamic, and individualized manner of development; partnerships with parents and families; and the desire to nurture agency in children by supporting them to actively construct meanings about the world through inquiry, exploration, and discovery taking place in the context of nurturing and responsive relationships with others. Unfortunately, our interviews with MSC and ASC faculty documented that few of the higher education programs in our study had begun responding to the changing policy landscape across the country, requiring more

and more public school principals to be responsible for supervising ECE programs. This point was further emphasized with the faculty members' lack of responsiveness to the introduction of TK. Despite TK policy requiring elementary school teachers and principals to be familiar with curriculum standards and instructional methods rooted in developmental science and ECE, the majority of MSC and ASC faculty we interviewed had no plans to revise their credential programs to include any ECE content. In contrast, many of these same faculty were quite articulate in describing the value of ECE and the depth of empirical research describing the critical importance of children's first 5 years. As Natasha explained, "there is something missing about the way that playing should be wholly integrated. . . . The academic literature is absolutely clear about the importance of this."

The juxtaposition of these findings provides evidence of the complex process of policy implementation described by Spillane et al. (2002), specifically, that "policy messages [like TK legislation] are not inert, static ideas that are transmitted unaltered" and then lead to the intended reforms but instead require that individuals "first notice, then frame, interpret, and construct meanings" (p. 392) about the policy messages before they can become a lever for change in beliefs, behavior, or professional practice. Few of the professors with whom we spoke were aware of elementary school principals' increased responsibility to supervise ECE classrooms, nor did they understand the ostensive purpose of TK to be a lever for bridging early childhood with elementary schooling. If they had opportunities to "notice, frame, interpret and construct meaning" about how TK, as a major statewide educational policy, was changing the landscape for teachers and administrators in elementary schools across the state, perhaps more MSC and ASC professors would have perceived the integration of ECE content into credential course work as *their own work*. In essence, as Spillane et al. described, as policy implementers, they were only noticing superficial aspects of the TK policy message (e.g., acknowledging the existence of TK as a new grade across the state) versus "interpreting" the deeper aims intended by policy makers that created and passed the TK legislation.

The ASC faculty spoke about their positive regard for early childhood educators and early childhood as an important time in children's lives. However, the majority of the ASC faculty did not have any formal education in child development or early childhood practices, although this fissure was downplayed in their assumptions that parenting, experience teaching early elementary school, or leading organizations serving young children were adequate proxies for the professional body of ECE knowledge. It is unlikely that a similar equation would be made about educating older children or youth, for example, that being the parent of an adolescent would adequately prepare an individual for effectively teaching high school students. This finding suggests that an important element of early childhood systems reform is the need to educate stakeholders that early childhood is a *profession* that includes specialized skills and knowledge derived from decades of research, training, and educators working with young children and their families. Until it is axiomatic that

early childhood as a field has its own bodies of professional knowledge and specialized disciplinary expertise, ECE as a field and its workforce will likely struggle to be equitably acknowledged and/or integrated within the credential course work of the academy. This requires overcoming a historical legacy where the education of young children was positioned as "women's work" (Beatty, 1995), disconnected from professional standards and compensation, and assumed to be skills and knowledge that were universally accessible to anyone with a capacity to *care* for children. Residuum of this history, positioning the knowledge and skills associated with teaching in early childhood with less parity and status than commensurate practices for older elementary or secondary students was discretely embedded in many comments throughout our interview data.

Many credential faculty members expressed feeling significantly challenged by imagining how they could possibly add another field of knowledge to their programs given the extensive range of content they are already responsible for addressing for each state's credentialing commission. The feelings of being overwhelmed led many to declare their wish to include ECE in course work while also justifying the impossibility of assuming this additional responsibility. This was evidenced in many comments, including statements that ECE was not in the ASC standards and therefore could not be realistically included in their curricula, or that ECE was incongruent with the increased academic demands of modern kindergarten classrooms. In so doing, ECE was positioned as residuary curriculum that could only be included in higher education course work as "someone else's work"—that is, as the result of state mandates or the existence of more developmentally appropriate schools.

The fate of ECE systems reform efforts will, to some degree, be determined by the opportunity to embed the precepts of high-quality ECE within *existing* credential curricula instead of maintaining this content as supplementary and superfluous material. Integrating ECE content into course work for elementary teachers and principals would be advantageous for more than the sample of educators who wish to work directly in early childhood classrooms. For example, "whole child" views of development and understanding the neurobiological foundations of learning could strengthen teachers' and principals' efficacy in content-focused work with students across the elementary grades. The scientific evidence base highlighting how child-initiated complex play and social-emotional skills support academic learning (Hirsh-Pasek et al., 2009; Johnson et al., 2013; Samuelsson & Carlsson, 2008) could also be leveraged to inform cross-content and cross-genre teaching in the elementary schools. Furthermore, acquiring knowledge about ECE will prepare teachers working in early elementary classrooms to enter and work within schools as they exist—with greatly increased academic demands in kindergarten (Bassok, Latham, & Rorem, 2015)—while simultaneously having the necessary skills and knowledge to advocate for schools to become more equitable and just environments that support children to have developmentally responsive learning experiences. As Marianna, the MSC professor with the most recent teaching experience in kinder-

garten and first-grade classrooms, stated, "I see a lot of kids—many, many students feeling like they are not smart because they are not where they are supposed to be, and then that getting reflected in their families feeling like their kids are not smart, or that there is something wrong. . . . The consequences are just really horrible, I think, of having such high expectations that aren't developmentally appropriate." Integrating developmental science and early childhood pedagogy into early elementary school could become a powerful catalyst for teachers like Marianna and their principals to reduce the pressure children are experiencing at school and attenuate the cascade of consequences that result from children's exposure to sustained stress, including negative impacts on cognitive, emotional, and physical well-being.

The state of California has previously recognized the importance of developmentally appropriate learning environments for young children through the creation of a separate Early Childhood Special Education credential, ensuring that teachers working with young children with disabilities have the requisite knowledge in child development and early childhood. We need to rally for this type of values commitment again as early childhood becomes an expanding presence in our public elementary schools. We must also be insistent that programs like TK not become a stand-alone legislative action but that they emblematize a deep and sustained process of comprehensive, coordinated, and *equitable* reform across educational systems. This means *pushing up* the best of early childhood practices into elementary schooling and listening and learning from early childhood professionals about how to design and support quality early learning environments for young children in public school environments. Additionally, we need to dismantle the barriers that exist in school districts and institutions of higher education that prevent teachers and principals from learning about child development and early childhood pedagogy. This begins by recognizing the importance of providing opportunities for adults to co-construct meanings about the messages, goals, and directives related to ECE systems reform policies and initiatives like TK. Having time to "notice, then frame, interpret, and construct meaning" about what it means to include ECE in elementary schools is a requisite first step in a long-term process of systems change.

Conclusion

Reform initiatives that connect ECE with public schooling, like the introduction of TK in the state of California, are likely to continue to expand their reach in districts and communities across the nation. This will require sustained effort in aligning historically divided systems, including our credential programs, in higher education. For ECE systems reform efforts to be successful, we need elementary school teachers and their principals to understand the foundations of high-quality developmentally responsive early childhood classrooms. Principals and district administrators should have the skills and knowledge to know how to enter early childhood classrooms and recognize effective "teaching": classrooms where learn-

ing and engagement are observed among young children happily building with blocks, using their imaginations in the dramatic play area, and collaborating with their peers in a measurement activity on the rug.

Notes

[1] See http://www.tkcalifornia.org/

[2] All names of individuals and programs are pseudonyms to protect confidentiality.

[3] See http://www.naeyc.org/

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