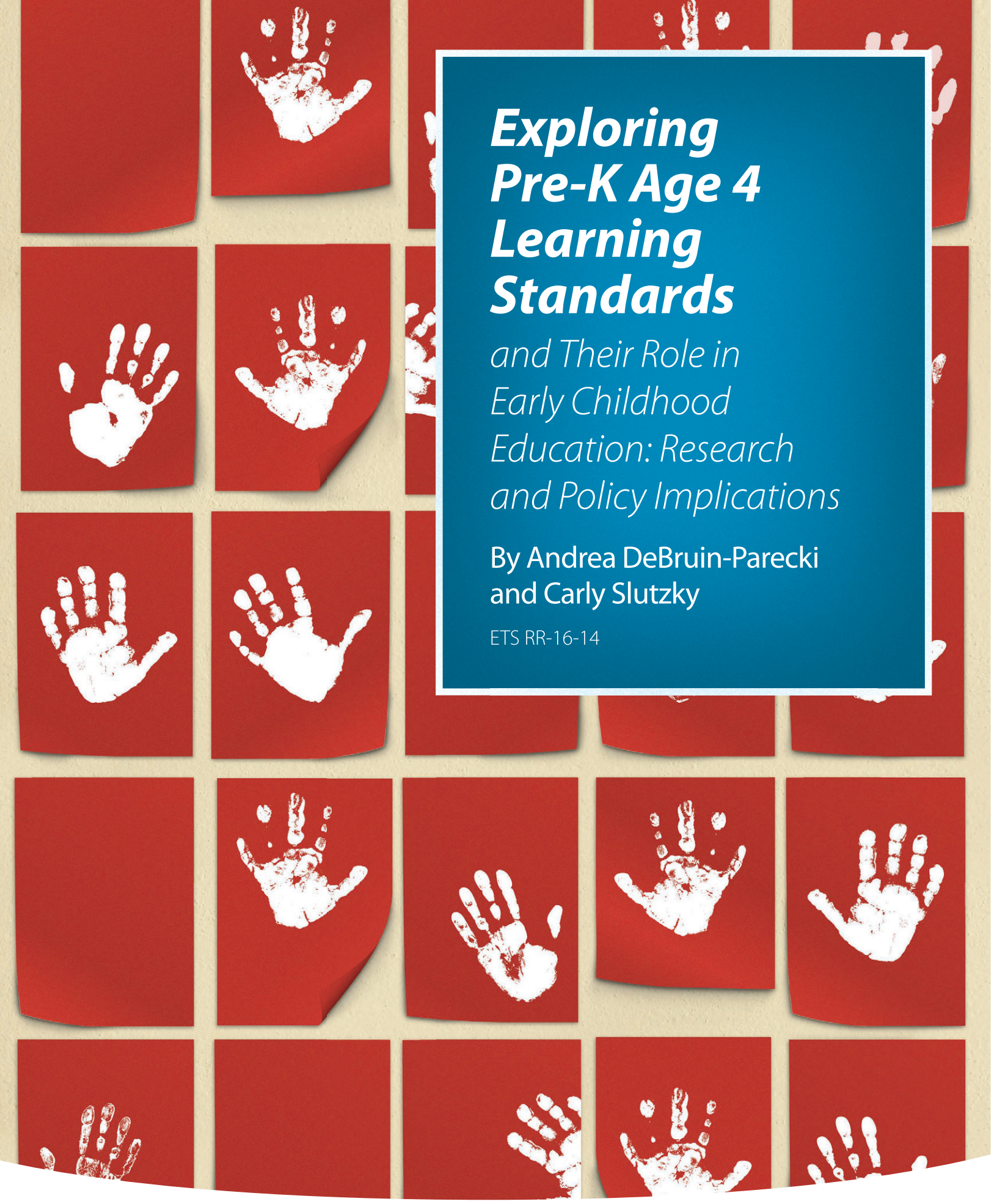

Exploring Pre-K Age 4 Learning Standards

and Their Role in Early Childhood Education: Research and Policy Implications

By Andrea DeBruin-Parecki and Carly Slutzky

ETS RR-16-14

ETS®

Measuring the Power of Learning.™

This Policy Information Report was written by:

Debra J. Ackerman
Educational Testing Service, Princeton, NJ

Policy Information Center
Mail Stop 19-R
Educational Testing Service
Rosedale Road Princeton, NJ 08541-0001
(609) 734-5212
pic@ets.org

Copies can be downloaded from:www.ets.org/research/pic

About ETS

At ETS, we advance quality and equity in education for people worldwide by creating assessments based on rigorous research. ETS serves individuals, educational institutions and government agencies by providing customized solutions for teacher certification, English language learning, and elementary, secondary and postsecondary education, and by conducting education research, analysis and policy studies. Founded as a nonprofit in 1947, ETS develops, administers and scores more than 50 million tests annually — including the TOEFL® and TOEIC® tests, the GRE® tests and The Praxis Series® assessments — in more than 180 countries, at over 9,000 locations worldwide.

Policy Information Report and ETS Research Report Series ISSN 2330-8516

RESEARCH REPORT

Exploring Pre-K Age 4 Learning Standards and Their Role in Early Childhood Education: Research and Policy Implications

Andrea DeBruin-Parecki & Carly Slutzky

Educational Testing Service, Princeton, NJ

Currently in the United States, 50 states, 5 territories, and the District of Columbia have established prekindergarten (pre-K) age 4 learning standards that are intended to outline skills and knowledge that set children on a path to success in kindergarten and upcoming grades. These standards are emphasized as a centralizing force in early childhood education, providing a bridge strengthening ties between preschool and elementary grades. This report presents a national study of pre-K age 4 learning standards based on an online survey completed by early childhood state and territory directors and administrators, geographically diverse focus groups representing a subsample of survey respondents, and one-on-one interviews composed of a sample of both focus group and survey participants. Data were collected from these sources and by direct examination of pre-K age 4 learning standards documents. Responses to survey, focus group, and interview questions advanced current knowledge regarding the purpose, history, and development of pre-K age 4 learning standards, comprehensiveness of standards documents, standards-related supports for teachers, and pre-K to kindergarten alignment. Systematic analysis of pre-K age 4 learning standards documents revealed extensive variation across titles, organization, terminology, and enriching materials, such as teacher strategies and child examples that assist teachers in implementing standards. A surprising finding is the positive view among early childhood leaders in focus groups and interviews toward establishing national pre-K age 4 learning standards. The report concludes with a brief discussion of implications of this study followed by recommendations to inform state and federal early childhood leaders, education-focused philanthropic foundations, and others in the field of early childhood education.

Keywords Early learning standards; preschool standards; early childhood education policy; standards alignment; preschool teachers

doi:10.1002/ets2.12099

> A growing body of research … shows the achievement gap begins before children even enter Kindergarten.
> —National Association of Elementary School Principals (2011)

There is much evidence that preschool can have a profound positive effect on children's future academic progress (Barnett, 1995; Cascio & Whitmore Schanzenbach, 2013; Gormley, Phillips, & Gayer, 2008; Heckman, Pinto, & Savelyev, 2013; Hood, Hunt, & Okezie-Phillips, 2009; Hunt, Hood, Hrdlicka, & Rutherford, 2012). To provide more support for this positive effect, economists have supplied significant data promoting the value of preschool. According to Cunha, Heckman, Lochner, and Masterov (2006), "the new economics of the life cycle recognizes that childhood is a multistage process where early investments feed into later investments. Skill begets skill; learning begets learning" (p. 799). With 42% of 3-year-olds and 68% of 4-year-olds enrolled in some kind of preschool program (National Center for Education Statistics, 2015), there is the potential to make positive differences for children in regard to future academic and life success. Those who are unable to access preschool programs, particularly of high quality, will most likely start kindergarten behind those who did attend preschool programs, leading to the start of achievement gaps (Garcia & Weiss, 2015; Reid & Kagan, 2015; Slaby, Loucks, & Stelwagon, 2005). Disadvantaged children who do attend high-quality preschools, such as those in Georgia and Oklahoma, with research-based comprehensive early learning standards that provide guidance for content to be taught across domains, may achieve at higher levels when entering school than those who do not attend such programs (Fitzpatrick, 2008; Gormley et al., 2008; Wong, Cook, Barnett, & Jung, 2008).

All U.S. states, territories, and the District of Columbia have early learning standards (DeBruin-Parecki & Slutzky, 2014). See Appendix A for a list of all prekindergarten (pre-K) age 4 state and territory learning standards websites.

Corresponding author: A. DeBruin-Parecki, E-mail: adebruin-parecki@ets.org

Early learning standards are defined as expectations for what children should know and be able to do before entering kindergarten (Scott-Little, 2010). However, unlike the current 43 states, 4 territories, and U.S. Department of Defense schools that have adopted the Common Core State Standards (CCSS; Common Core State Standards Initiative, 2015) for elementary and secondary grades, preschool programs across the country do not have common standards. The lack of common standards makes it difficult to agree on exactly what all preschool children need to know and accomplish prior to entering kindergarten. In response to this, the Office of Head Start (2015) released the Head Start Early Learning Outcomes Framework: Ages Birth to Five to be used by all Head Start and Early Head Start programs across the country. Even with early learning standards created by their home states and territories and the Early Learning Outcomes Framework, all preschool programs in the United States and its territories will not implement them for various reasons. Typically, as seen later in this report, standards are most likely to be implemented in state-funded programs (Scott-Little, Lesko, Martella, & Milburn, 2007). These state-funded programs enroll 14.5% of 3-year-olds and 41.4% of 4-year-olds who attend preschool in the United States, including those in Head Start and special education programs also funded by the state (Barnett, Carolan, Squires, Clarke-Browne, & Horowitz, 2015).

Early learning standards, which are written for the purpose of determining what children will learn and be able to do while attending and exiting preschool, are only one type of standards related to preschool programs. Another type of standards are program performance standards that center on what is required in a school as a whole as well as in individual classroom environments. The purpose of program performance standards is to provide rules that apply to bringing a preschool program as a whole up to expectations. Program performance standards may delineate rules for parent engagement activities, or children's hand washing, or number and types of books in a classroom. The most noted of these standards are the Head Start Program Performance Standards (Head Start, 2015) and the National Association for the Education of Young Children (NAEYC) Early Childhood Program Standards that are used to accredit quality preschool programs (National Association for the Education of Young Children [NAEYC], 2015b). There are also standards related to quality rating and improvement systems (QRIS; Shen & Ma, 2013). QRIS is a rating system used to assess and improve the quality of preschool care and educational programs. Quality standards provide the basis for a program rating, not children's performance. However, like early learning standards, QRIS systems vary by state, with individual states deciding on what defines quality. This makes it difficult to look across states to determine the impact of quality preschool, just as the varying early learning standards create issues in determining exactly what young children around the country are expected to know and be able to do before kindergarten entry.

A Guide to the Report

Early learning standards and issues related to their use and role in early childhood education are examined in the next section. The included segments provide background for the study and focus on the purposes and history of early learning standards, early learning standards content, professional development for teachers related to early learning standards, diversity represented in early learning standards, alignment of pre-K early learning standards with kindergarten and beyond, and a consideration of national age 4 pre-K early learning standards. In the following sections of the report, a description of the methodology used for analyses of data is presented, followed by the study findings. The report concludes with implications and recommendations for early childhood education stakeholders and policy makers.

In the first segment of the next section, a brief history of early learning standards is explored. This history can provide an understanding of how states began to write these standards and where the country is now in terms of learning expectations for pre-K age 4 children. The history of early learning standards demonstrates when states began to shift from just play and general aspects of child development to looking at early childhood education as a period for developing more specific skills in multiple domains, including academics.

History of Early Learning Standards

> By design early learning standards are intended to be the foundation upon which many other elements of early care and education are built.
>
> —Scott-Little, Kagan, and Frelow (2006, p. 2)

Early learning standards both in the past and today are known by a variety of names, such as *early learning standards, developmental standards,* and *early learning guidelines* (see Table 3 for further details). These documents are organized in multiple ways in terms of numbers and names of levels and supplemental content such as teaching strategies and child examples. While state and territory early learning standards specify expectations for young children to accomplish before entering kindergarten, all documents do not include the same content. When standards were first written, they were primarily intended for 4-year-old preschool children without consideration of those younger or older. Today some are written along a developmental continuum defined as a predictable, but not rigid, sequence of developmental milestones for children to accomplish in a particular area, such as literacy (Bodrova, Leong, Paynter, & Semenov, 2000). In 2003, Scott-Little, Kagan, and Frelow reported that 24 states addressed an age range of 3- to 5-year-olds in their standards documents, and 4 states began standards at birth.

The writing of early learning standards can be traced back to the advent of the era of accountability, namely, the enactment of the No Child Left Behind Act of 2001 (NCLB; Scott-Little, 2010; Stipek, 2006). As the focus on accountability in K – 12 increased, many states and territories began to look downward and consider preschool as a period that can and should ensure children's preparedness to succeed in school. Along with this changing perspective, seminal work in the fields of research on early childhood education and child development highlighted young children's capabilities as learners (National Research Council, 2001) and the potential benefits of attending preschool (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010). This increasingly supportive climate toward preschool education underscored the need for states to establish preschool learning standards.

According to Scott-Little et al. (2007), 10 states had some form of early learning standards in 1999. A variety of early childhood professionals and researchers saw these initial attempts at writing state early learning standards as not being developmentally appropriate or sensitive and worried about instructional quality deteriorating as teachers became more concerned about teaching to a test than implementing developmentally appropriate instruction (NAEYC & National Association of Early Childhood Specialists in State Departments of Education [NAECS/SDE], 2002). However, even with these concerns, the federal government moved forward and wrote the Good Start Grow Smart Initiative (White House, 2002). This initiative provided a major impetus for the development of early learning standards by encouraging states to create voluntary guidelines or standards. The guidelines needed to outline prereading, literacy, and language expectations for 3- to 5-year-old children that aligned with K – 12 standards. Following this initiative, in 2002, the total number of states that had early learning standards grew to 27 (Scott-Little et al., 2007). In response to the increased number of states having early learning standards, NAEYC and NAECS/SDE (2002) issued a joint statement to provide guidelines for the development of standards and to prevent their misuse. These guidelines stated that early learning standards support positive development and learning only if they (a) "emphasize significant, developmentally appropriate content and outcomes"; (b) "are developed and reviewed through informed, inclusive processes"; (c) "are implemented and assessed in ways that support all young children's development"; and (d) "are accompanied by strong supports for early childhood programs, professionals, and families" (p. 2).

Between 1999 and 2006, the number of states with pre-K standards increased from 10 to 49 plus the District of Columbia (Scott-Little et al., 2003; Scott-Little et al., 2007). Today, all 50 states, the District of Columbia, and 4 U.S. territories have some form of early learning standards (DeBruin-Parecki & Slutzky, 2014). The majority of state early learning standards documents have become more comprehensive over time and have clear academic foci on cognitive skills related to literacy, mathematics, science, and social studies. The level of emphasis states place on domains other than academics, such as social/emotional skills, physical development, and approaches to learning, varies (Kagan, 2012).

Little research has been conducted to track the history of how individual state early learning standards or learning standards as a whole have evolved over time. There is also a dearth of recent studies that examine the content, uses, and implementation of early learning standards. The most comprehensive studies were conducted between 2003 and 2010 (Scott-Little, 2010; Scott-Little et al., 2003, 2006; Scott-Little et al., 2007). During this time period, Neuman and Roskos (2005) examined how 43 states organized their standards in mathematics and literacy and the terminology used. They found major variation in the terminology and structure of the standards across the states as well as in the clarity of content. They identified six different descriptive levels that states could use to organize and further describe the content and practical application of a standard: domain, category, indicator on two levels (description of a general skill or description of a specific skill), example of what a child might do, and example of what a teacher might do. About half the states used four levels, one-third used three levels, and 12% used five levels. Neuman and Roskos also found differences in the

resources attached to the standards. They concluded, as did Scott-Little et al. (2006), that no two states were exactly alike, each reflecting variation based on who worked on the writing of the standards document and the level of their early childhood education expertise. Most recently, in 2012, Kagan provided a general overview of the history of early learning standards and also found great variation among states. She suggested, however, that early learning standards could be put to multiple uses in all states, including improving instruction, developing curriculum, promoting parent education, improving teacher education, evaluating programs, monitoring national progress, and improving public knowledge of children's development. However, she did not provide clear information about who might be using early learning standards in these ways.

Less work has been done to evaluate the content of standards. Neuman and Roskos (2005) examined the key research-based predictors of early mathematics and literacy, then examined early learning standards across 43 states and provided exemplars of skill areas and indicators in each research-based predictor. In literacy, the areas examined were language development, phonological awareness, letter knowledge, and print conventions. In mathematics, the areas examined were numbers and operations, geometry and spatial relations, algebra, and data analysis. Neuman and Roskos concluded that some states needed to be more parsimonious by reducing the number of indicators, to exhibit more clarity, and to work toward the big ideas. The authors did not analyze findings by state or compare one state to another. Scott-Little et al. (2006) determined after examining 46 early learning standards documents that most states had five developmental domains, including physical well-being and motor development, social and emotional development, approaches toward learning, language and communication development, and cognition and general knowledge. However, all states did not have the same indicator levels or same range of items within their pre-K age 4 standards documents. An interesting finding in the language and communication domain was that 20 states had no mention of vocabulary and 14 had no mention of comprehension, both important areas for young children's literacy development. One broad conclusion drawn from Scott-Little et al.'s study was that all state early learning documents did not reflect the early childhood research literature. Finally, Daily, Burkhauser, and Halle (2010) reported that, in general, state early learning guidelines focus on language and literacy, early mathematics and numeracy skills, early science and problem-solving skills, creative arts, social studies and technology, social and emotional development, approaches to learning, and physical health and development. More specifically, all 50 states plus the District of Columbia have early language and literacy in some form, all but one state have early mathematics, 46 states plus the District of Columbia have early science, 42 states plus the District of Columbia have creative arts, 32 states have social studies, 48 states plus the District of Columbia have social/emotional development, and 48 states plus the District of Columbia have some form of physical health and development learning standards. Past research has suggested that the number of domains and breath of content represented in state pre-K standards have clearly increased over the years.

The history of early learning standards is a story still being written. There is still much to learn about preschool learning standards as they continue to change in states, the District of Columbia, and U.S. territories over the years. Next, the purpose of early learning standards is addressed.

Purpose of Early Learning Standards

> Without standards to define expectations for what children should know and be able to do before Kindergarten, individual teachers and programs are left to decide for themselves what children should learn, and these decisions may or may not be age-appropriate or equitable.
>
> —Scott-Little (2006, p. 1)

Early learning standards have a multitude of purposes, some very positive, others not. Gronlund (2014) claimed that early learning standards describe expectations for the learning and development of young children, and part of their purpose is to help children acquire and refine foundational skills that will assist them in learning content and information in later grades. Early learning standards can also clearly define what is expected to be taught and learned, acting as a guide for educators. In addition, standards can be linked to assessment that can then provide accountability measures demonstrating how preschoolers show what they have learned related to specific standards (Scott-Little et al., 2003). One purpose of early learning standards is to help create a developmental learning continuum. Each year (e.g., preschool, kindergarten, Grade 1) of learning standards that align with the previous or upcoming year of learning standards broadens

the continuum, and this can help ensure that there is continuity of learning for children (NAEYC, 2015a; Takanishi & Kauerz, 2008). Professional development for teachers that is aligned with early learning standards content can help ensure that this continuity of learning is understood and taken into account when making instructional decisions (Takanishi & Kauerz, 2008). Finally, as far back as 2002, another important purpose of early learning standards was supplied: the value of using them to inform families of what their children are expected to learn (NAEYC & NAECS/SDE, 2002).

Apprehension about early learning standards and their purposes exists for a variety of reasons (Bowman, 2006; Kagan, 2012; Neuman & Roskos, 2005). One key concern is inequity for young learners across states, the District of Columbia, and U.S. territories. Inequity is apparent in the contents of early learning standards documents and in their uses. Preschoolers in different states who attend programs that adopt standards are exposed to differing content, varied levels of expectations (set too high, set too low), and differing instructional quality in regard to meeting standards, making inequity obvious (Bowman, 2006; DeBruin-Parecki, Slutzky, & Shine, 2015b; Kagan, 2012). One of the most powerful reasons that critics have for not being in favor of early learning standards is their misuse by teachers who do not receive sufficient and appropriate professional development to prepare them to interpret standards correctly and understand how to integrate them into daily instruction (Kagan, 2012). Teachers often do not know how to incorporate standards into their teaching and assume drilling children on discrete skills is what is required. Scott-Little (2006) asserted, "Standards require us to be more intentional about what we teach, but do not mean we should all be teaching the same way" (p. 9). How preschool teachers interpret teaching the content of early learning standards is also a fundamental issue.

Early childhood education has typically integrated content areas. The teaching of discrete content skills as seen in state early learning standards documents could put emphasis on academics, leaving social/emotional and physical skills behind (Bowman, 2006). This leads to worry that standards could divide learning and provide little meaning for young children (DellaMattera, 2010; Neuman & Roskos, 2005). For teachers to understand how to meaningfully teach their young students using standards as the basis for their instruction, clear and effective professional development must take place. This issue is examined next.

Issues Associated With Early Learning Standards–Related Professional Development for Teachers

> With content-based standards that focus on cognitive development a reality for preschoolers, it is essential that early educators have access to the knowledge, skills, and abilities that will allow them to engage preschoolers in appropriate and meaningful activities that encourage learning across all human development domains.
>
> —DellaMattera (2010, p. 44)

There is a degree of apprehension regarding what teachers understand about standards and how they relate this understanding to instruction. This calls for a substantial expansion of professional development to assist early childhood teachers and administrators to implement standards (NAEYC & NAECS/SDE, 2002). According to Tout, Halle, Daily, Albertson-Junkans, and Moodie (2013), "the best designed early learning standards will have minimal impact on children's success unless they are incorporated into the early childhood professional development system and program curriculum and assessment practices" (p. 38). Furthermore, with current discussion about developmentally appropriate practice and teaching along a developmental continuum (Kohler, Christensen, & Kligo, 2012), professional development sessions should include teachers from grades above pre-K along with those working at the preschool level (Hunt et al., 2012).

By 2006, 49 states had written and finalized their early learning standards (Brown, 2007; Scott-Little et al., 2007). These standards documents were disseminated to teachers and administrators for use in classrooms and to community college and university early childhood teacher preparation programs for use in course work (NAEYC, 2009a). The early childhood workforce is very diverse and consists of teachers with varying levels of education and knowledge about child development, instructional practice, and content (NAEYC, 2009a). This can lead to some teachers becoming overwhelmed and confused by the content of early learning standards documents and how to implement this content in classroom instruction (DellaMattera, 2010). Because of this wide variation in education and knowledge, state leaders who focused on early learning standards dissemination and implementation found that varied and focused types of instruction that directly connected professional development to everyday practice were important (DeBruin-Parecki, Slutzky, & Shine, 2015a). According to Douglass, Carter, Smith, and Killins (2015), "researchers are finding more and more that professional development has little impact when it is disconnected from other change efforts or the everyday practices where educators work" (p. 2).

To promote effective implementation of standards-based instruction, states began to develop targeted professional development around early learning standards that included both in-person and online teaching (Scott-Little et al., 2007). Over the years, technical assistance has become more directed toward assisting teachers in intentionally planning goal-directed and standards-supported activities and learning centers for young children (Scott-Little, 2010). Currently more than half of the nation provides teachers with specific standards-focused teaching strategies and examples of standards-focused practice in the classroom primarily within their actual standards documents (DeBruin-Parecki et al., 2015a; see Appendix B).

As early learning standards continue to be revised and adopted, professional development for teachers and administrators is more likely to remain consistent, frequent, accessible, and practical for the training to be successful. As Scott-Little and Reid (2010) have reminded us, "standards require us to be more intentional about what we teach but do not mean we should all be teaching the same way" (p. 9). For standards-based instruction to be successful for all children, teachers and administrators should be familiar with early learning standards, knowledgeable about child development, and able to work with diverse populations, enabling them to engage in effective developmentally appropriate practice. Early learning standards often do not provide teachers with helpful information for working with diverse populations, specifically those whose first language is other than English and children with special needs. This issue is addressed in the next section.

Addressing Diversity in Early Learning Standards

> The content of effective early learning standards, and expectations for children's mastery of the standards, must accommodate the variations — community, cultural, linguistic, and individual — that best support positive outcomes. To do so, early learning standards must encompass the widest possible range of children's life situations and experiences, including disabilities.
>
> — NAEYC and NAECS/SDE (2002, p. 5)

Although the preceding statement was part of the NAEYC and NAECS/SDE joint position statement written in 2002, many states still do not address diversity issues in their early learning standards. In 2003, Scott-Little and colleagues found that accommodations for individual differences are valued by most. However, they also stated that "relatively few specifics have been provided on how children from various cultures, children who speak languages other than English, and children with disabilities are to be accommodated when standards are implemented" (p. 25). A study conducted a few years later, when the majority of states had early learning standards, indicated that although most states acknowledged the need for these standards, only seven states addressed disability issues specifically, and eight addressed English language learner (ELL) issues in some manner within their actual early learning standards documents (Scott-Little et al., 2007). DeBruin-Parecki et al. (2015a) updated this earlier research by examining all state, U.S. territory, and District of Columbia early learning documents, and related websites, to identify which early learning standards documents had separate indicators and/or strategies for English as a second language children and children with special needs. Results of these analyses are found in the Findings section of this report.

Although it is clear that a large number of ELLs and children with special needs are enrolled in preschools in the United States and its territories, the exact figure is not always apparent. The number of ELLs in preschool is difficult to discern, as many programs, both state funded and private, do not keep separate counts. Yet, it is apparent that the number is growing (National Clearinghouse for English Language Acquisition, 2011; Williams, 2015). Thirty percent of children who attend Head Start or Early Head Start are ELLs (Office of Head Start, 2014).

As for those children with special needs, in 2013, 3% of 4-year-olds were enrolled in publicly funded preschool or Head Start programs designated as special education preschools (U.S. Department of Education [USDOE], 2015). However, many children with special needs participate in inclusion classrooms, and some are not formally identified (Odom, Buysse, & Soukakou, 2011). States and territories may use this inability to accurately count the number of age 4 pre-K ELL students and students with special needs as a reason not to write specific standards for them.

Another issue in regard to the lack of specific diversity standards involves teachers and instructional methods. Teachers who do not receive explicit information in standards documents about diverse populations are often provided with general information statements and little more. A statement like this might read as follows: "Modifying instruction, learning centers, and activities may be necessary in order to accommodate ELL children or children with special needs." However,

this type of statement is of little use to a teacher who does not know how to make these adaptations. Standards that do not take diversity into account may suggest that all children develop and learn in similar ways. Teachers need to gain more knowledge of how to adapt instruction for diverse populations in their classrooms.

Concern about using standards that do not reflect differences between highly diverse populations residing in a single state or territory is growing. Variations in populations occur by ethnicity, race, poverty level, language, and ability (Kagan, 2012). Not taking these and other characteristics into account can clearly disadvantage some populations being held to standards written broadly for all children (DellaMaterra, 2010). The next section addresses issues associated with alignment of pre-K age 4 standards with kindergarten standards and ages or grades above and below.

Alignment of Prekindergarten Early Learning Standards With Kindergarten Standards and Beyond

> The Common Core State Standards were designed for grades K – 12. However, the exclusion of pre-K, does not mean that a child's early developmental years are insignificant or can be ignored. Far from it. Researchers and policymakers alike recognize that a child's development before Kindergarten has a significant impact on their success throughout school. Therefore, there has been a growing emphasis on pre-K and the need to align its standards and expectations with the K – 12 Common Core.
>
> — Education Commission of the States (2015)

As greater amounts of public money are invested in preschool programs, there will likely be more pressure for pre-K and public schools to collaborate and build stronger connections to assure that gains made in preschool do not disappear once children leave (Takanishi & Kauerz, 2008). Over time, states have become aware of the need to align pre-K learning standards with earlier years and/or upcoming elementary grades to form developmental continuums or learning progressions of domain-specific skills, from birth to Grade 3, pre-K to Grade 3, or pre-K to Grade 12 (Kagan & Tarrant, 2010). This has triggered the need for well-developed alignment processes. According to the National Governors Association (NGA; 2012), "developing more aligned B – 3 standards would establish a more coherent learning pathway from birth through the early elementary years, with expectations about children's learning and development that are shared by both ECE [early childhood education] and public schools" (p. 4).

There are two types of alignment: horizontal and vertical. *Horizontal* alignment is "the degree to which standards, curriculum, and assessment are consistent within a given age group," and *vertical* alignment is "the degree to which standards, curriculum, and assessments are synchronized between age cohorts" (Scott-Little & Reid, 2010, p. 111). Horizontal alignment allows disparate early childhood programs to provide learning experiences for children that are addressed in the state standards. Vertical alignment verifies that children have learning experiences that build on previous years and forecast upcoming ones. The extent to which states and territories align their standards to others or conform to either of these conceptions of alignment is questionable, as those that do most often do not make their alignment processes public (DeBruin-Parecki et al., 2015b).

Alignment of early learning standards is a difficult process and does not easily occur for many reasons. States trying to align standards often look only at kindergarten as their alignment target. Much of the time, alignment can simply be a matching of early learning standards as they are being written to completed kindergarten standards (Scott-Little et al., 2007). An earlier survey of 42 states found that 25 states either used their K – 12 state standards as a model for writing pre-K learning standards or paired their newly written early learning standards during the writing process to their existing kindergarten state standards. Twenty-six states made some effort to align their early learning standards with curricula, and only 16 states dealt with the alignment of standards and assessment (Scott-Little et al., 2007). *Crosswalks*, processes that include content analyses and side-by-side comparisons, have been used to determine similarities between two sets of standards that can then be matched (Scott-Little & Reid, 2010). Commercial companies have worked with states to horizontally align their standards to curricula and assessments in pre-K and kindergarten (Teaching Strategies, 2015).

Many factors make aligning standards from pre-K to later grades difficult, a primary one being differing content areas. With the majority of states trying to link early learning standards to kindergarten Common Core State Standards (KCCSS), they are forced to reduce this alignment to just language arts and mathematics, the two domains in the KCCSS (NGA & Council of Chief State School Officers [CCSSO], 2010). This does not represent the whole child and leaves out important

areas that continue to develop and play a role in future school success as the child grows, such as noncognitive skills represented in social/emotional and approaches to learning domains (Garcia & Weiss, 2015; NGA, 2012). States such as Georgia have created aligned standards documents beginning at birth and going through Grade 3 that represent a child's development beyond just academics. A recent study of these aligned standards concluded that even though Georgia as a leader in this area has done a remarkable job, many areas still need major improvement (Kagan, Scott-Little, Reid, Gomez, & Friedlander, 2011). The results of this study demonstrate that even with excellent resources, creating standards documents is a very time-consuming and difficult process.

NAEYC (2009b, 2015a) has highlighted the need for a developmental continuum of standards for early childhood along with matched developmentally appropriate practice. Many states are moving toward pre-K to Grade 3 or pre-K to Grade 12 alignment and are finding methods to ensure that the whole child is represented (Halpern, 2013; Hood et al., 2009; Tout et al., 2013). Representing the whole child means going beyond linking just academics and including social/emotional, cognitive, and physical development (Slade & Griffith, 2013). A developmental continuum of early learning standards taking the whole-child perspective into consideration can provide one way to ensure more equitable schooling for all children by allowing them to begin where they are across multiple domains and to move forward to where they need to be (NGA, 2012). Consideration of equity in early schooling leads to the following section, which briefly considers the possible need for pre-K age 4 national standards.

Consideration of National Standards for Prekindergarten

> As for state-to-state alignment, the current situation is chaotic. Although discussion about establishing some kind of national standards framework is gaining momentum, there is no common set of standards at the moment.
>
> —NAEYC (2009a, p. 4)

There is debate by early childhood leaders, researchers, policy groups, and others across the country about having national standards at the preschool age 4 level. Kagan (2012) stated that "within early childhood, some consideration is being given to the desirability of developing common standards" (p. 64). In a review of various early childhood state standards, a patchwork of concepts, knowledge, skills, and abilities appeared and showed substantial differences from state to state, with some content areas varying more than others (Bracken & Crawford, 2009). The Bracken and Crawford review demonstrated the vast differences in state standards that have persisted over the years, as each state, territory, and the District of Columbia continues to write its own pre-K age 4 early learning standards, leading to differing learning expectations for young children (DeBruin-Parecki et al., 2015b). Currently the closest thing to national pre-K standards is the Head Start Early Learning Outcomes Framework: Ages Birth to Five provided to all Head Start and Early Head Start programs across the country (Office of Head Start, 2015).

National pre-K age 4 learning standards could provide multiple advantages for children and teachers according to the early childhood leaders participating in our study. One advantage of pre-K age 4 national standards would be easier alignment with K–3, especially for those states that adopted the CCSS (NGA & CCSSO, 2010). Expectations would be more equitable for all children no matter where they live, as the content of standards would not be different from place to place. States, the District of Columbia, and U.S. territories would gain the ability to communicate and work together to collaboratively build a variety of needed materials centered on the standards. Working in partnerships would allow those with more resources to share meaningfully what they have previously accomplished with others who lack resources. Higher education instruction for future pre-K teachers and professional development for classroom teachers would focus on the same standards across the nation, making it easier for teachers to move and not have to relearn standards. Once completed, there would also be less time and a smaller workforce needed by individual states working on standards and alignment (DeBruin-Parecki et al., 2015a, 2015b).

Children who attend preschools that have adopted standards are not learning the same basic skills across the same domains and are being prepared to enter kindergarten differently based on where they live. Having the same standards would allow more emphasis on adapting instruction, as states could work together to determine ways to best teach diverse populations. If young children move from state to state, expectations for what they should have learned in pre-K can differ widely. As long as this situation exists, the idea of national pre-K learning standards or content guidelines will continue to be discussed and debated in the coming years (Daily et al., 2010; Kagan, 2012; NAEYC, 2009a).

Examining Early Learning Standards in the Context of a National Study

The variability in design and content of pre-K age 4 early learning standards documents, coupled with consistent changes over the years, calls for an updating and broadening of results from related past studies. This is the primary goal of this national study about the history and development of standards and issues related to their use and role in early childhood education. The study, described in the next section, was guided by the following research questions:

1. Why do we have early learning standards?
2. What is the history of pre-K age 4 learning standards development?
3. How are pre-K age 4 learning standards developed, and for whom?
4. Who uses pre-K age 4 learning standards?
5. How do pre-K age 4 learning standards documents vary across the nation?
6. What resources are available to help teachers use pre-K age 4 learning standards?
7. Are there early learning standards documents that contain specific information for ELL populations and children with special needs?
8. How do pre-K and kindergarten work together to align standards, and why is standards alignment important?
9. What is the perceived value of having national pre-K age 4 learning standards?

Methodology

This section describes the methodology for the Standards Study, which was launched by DeBruin-Parecki and Slutzky in 2014 (DeBruin-Parecki & Slutzky, 2014; DeBruin-Parecki et al., 2015a, 2015b). The multiple phases of data collection and recruitment; characteristics of study participants; data collection measures used; and the analysis plan are outlined. Data collection for this study was completed in four phases: A national online survey was conducted between February and May 2015; focus groups were conducted between June and August 2014; interviews were conducted between June and September 2014; and pre-K age 4 learning standards documents from U.S. states and territories and the District of Columbia were located online for analysis between July 2014 and July 2015.

Surveys, focus groups, and interviews were completed by officials responsible for early childhood education in state departments of education. Fifty-six leaders across the U.S. states, territories, and the District of Columbia received the survey to complete online. The survey aimed to describe patterns, similarities, and differences in pre-K age 4 learning standards across the U.S. states and territories, covering multiple topics, including pre-K age 4 literacy standards history, development, content, kindergarten readiness, and alignment between preschool and kindergarten standards. The part of the survey presented in this report focuses on early learning standards for 4-year-olds with an emphasis on literacy. Following the completion of survey administration, a subgroup of survey respondents participated in focus group meetings. Interviews were conducted during this same time period with a selected subgroup of survey participants. Initially, early literacy standards for 4-year-olds was the central focus of the study and data collection. Online survey participants provided responses about pre-K age 4 learning standards that extended to standards in multiple domains beyond literacy. In turn, subsequent data collection through focus groups and interviews addressed pre-K age 4 learning standards for different developmental domains and academic subjects.

Pre-K age 4 learning standards documents provided the fourth data source. Fifty-four pre-K age 4 learning standards documents were available for analysis. They were analyzed to describe variation in organization, terminology, titles, and content area coverage and to substantiate survey responses about what individual states and territories include in their documents.

Participants and Recruitment

Leaders in early childhood education within state departments of education across the nation and U.S. territories composed the sampling frame for study participation. Key criteria for participation included possessing deep knowledge of development, revision, and implementation of their pre-K age 4 learning standards; an understanding of professional development for teachers related to these standards; and serving in a leadership role that included working with preschool standards. Recruitment was completed by first identifying individuals, such as directors of early learning, in state departments of education who met the participation criteria and then screening them by telephone to ensure that participants

were in the best position to provide accurate information for their respective states or territories. Screening questions asked potential participants about their knowledge of the design, content, and implementation of past and current pre-K learning standards; their knowledge about the skills children need at kindergarten entry; and about standards alignment. Prospective participants were enlisted prior to receiving the survey with the understanding that they would first complete the online survey and possibly be invited later to participate in focus groups and interviews. At the conclusion of recruitment, 56 individuals from 50 U.S. states, 5 U.S. territories, and the District of Columbia were contacted and agreed to participate in the online survey.

Fifty-three of the 56 recruited individuals completed the online survey. Recruited representatives from Alabama, Vermont, and American Samoa opted not to participate. The final online survey sample included 53 leaders working in early childhood agencies or departments of education across 48 states, 4 territories, and the District of Columbia. Online survey participants were predominantly female (90%) and Caucasian (94%) and highly credentialed (87% with a master's degree or higher), and licensed as teachers (77%), with many years of experience in the field of early childhood (85% with 16 or more years of experience). Respondents were directors of early childhood education or held a leadership role related to pre-K age 4 learning standards in either a state department of education or another state agency focused on children and families. See additional details about participants' professional and education backgrounds in Appendix C.

Following completion of the online survey, a geographically diverse group of survey respondents was invited to participate in focus groups and interviews. Twenty-one individuals took part in one of five focus groups cofacilitated by the two study authors that met in New Jersey, Illinois, California, Virginia, and Georgia. Focus group meetings on average had four participants. Seven of the 21 focus group participants had not previously completed the online survey. These individuals were recruited to participate in Phase 2 of the study because the survey respondent for their state or territory was not available. They were colleagues of the survey respondent and recommended for participation because they possessed a similar level of knowledge and experience. Study authors also screened these seven individuals using the online survey sample recruitment screening protocol. Focus group participants were 100% female and Caucasian. Most participants had attained a master's degree or higher (96%), were licensed teachers (76%), and reported many years of experience in the field of early childhood (86% with 16 or more years of experience). Similar to the online survey sample, focus group participants served in administrative and leadership positions related to pre-K age 4 learning standards in either state departments of education or other state agencies focused on children and families. Appendix C provides additional details about their professional and education backgrounds.

The study authors conducted 25 interviews either in person or by telephone. Twenty-one of the 25 interviews were completed with original online survey respondents. The remaining four individuals were recruited after the online survey and at the recommendation of original survey respondents who were unavailable. The study authors screened these four individuals prior to completing interviews. The majority of interviewees were Caucasian (96%) and female (88%). Interviewees were highly educated (88% had attained a master's degree or higher), most were licensed teachers (88%), and the majority had worked in the field of early childhood for 16 or more years (84%). Appendix C displays specific information about interview respondents' professional titles and organizational affiliations. Fourteen individuals who participated in a focus group meeting also completed an interview.

Types of Data Collected

Online Survey

The online survey included 54 closed- and open-ended items vetted internally and externally prior to administration (see Appendix D for complete survey). Internally, five individuals in the Research and Development Division of ETS with expertise in and experience with survey design and implementation examined the survey tool and provided feedback to ensure survey items were methodologically sound and culturally sensitive. Study authors responded to internal review recommendations prior to presenting the survey tool to external reviewers. An external panel of seven academics with recognized expertise in early childhood education and early literacy provided comments on substantive content, including feedback about whether the survey tool appropriately and adequately addressed and assessed key topics. After the authors had addressed external review panel recommendations, they returned the revised survey tool to the panel for final review prior to implementation.

The 54-item survey was designed to assess two main topics: pre-K age 4 learning standards and kindergarten readiness. The subset of 28 questions used in this report focuses on pre-K age 4 learning standards. Respondents reported on the development history of past and current pre-K age 4 standards and alignment with K – 12 standards (e.g., English Language Arts Common Core State Standards [ELA CCSS]) in their respective states or territories. Several survey items about respondents' demographics and professional and educational backgrounds are also included in this report. The remaining items on kindergarten readiness will appear in an upcoming report on this topic. Survey items about pre-K age 4 learning standards were written with a focus on literacy, given the emphasis on literacy in both preschool and the KCCSS. The number of survey questions completed by each respondent varied, as some questions were not applicable given the current status on related issues in an individual state or territory. Nonapplicable items were skipped, as determined by prior survey responses.

Focus Groups and Interviews

Data collection through focus groups and interviews was broadened beyond literacy to more generally examine pre-K age 4 learning standards across domains and academic subject areas. Focus group participants discussed four questions expanding on standards-related topics from the online survey. The following focus group questions were included: (a) How has the state's adoption of pre-K standards impacted pre-K classroom instruction? (b) How do kindergarten and pre-K work together in your state to align the standards? (c) Why might it be important to align pre-K age 4 literacy standards to kindergarten standards, in particular the kindergarten ELA CCSS? (d) Why might it be important for us to have national pre-K age 4 literacy standards? During interviews, participants were asked the following five interview questions related to pre-K age 4 learning standards: (a) What characteristics of your pre-K early learning standards document make it a comprehensive guide to preschool expectations? (b) How do your standards documents provide information to assist teachers in helping children meet the standards? (c) Why might it be important to have standard-specific instructional strategies for teachers as part of the standards? (d) Why is it important to have initial and ongoing training for administrators and teachers around standards content and associated teaching? and (e) Why might it be important for us to have national pre-K age 4 literacy standards? Focus groups and interviews were audiotaped and transcribed verbatim.

Prekindergarten Age 4 Literacy Standards Documents

Fifty-four pre-K age 4 learning standards documents located through a systematic online search or by direct communication with study participants were examined to determine organization of standards documents. See Appendix A for the list of pre-K age 4 learning standards documents used in this report. American Samoa and Northern Mariana Islands declined to provide their pre-K age 4 learning standards documents and were not included in analyses. Available pre-K age 4 learning standards documents were analyzed to describe variation in how standards are organized and presented. Section headings within the standards served as the unit of analysis indicating the hierarchy of content levels and the depth of standards content. Section headings within the literacy and language pre-K age 4 learning standards were identified and confirmed through team consensus to (a) describe the number of levels within which standards content was organized (i.e., from the most global level, e.g., domain, to the most specific level, e.g., indicator) and (b) describe the different terms used to label standards content levels. When the organization and terminology of section headers within the standards were unclear, supplementary information, located in standards document introductions or as part of standards organizational maps, was used to clarify identification of standards levels and level labels. Titles of available pre-K age 4 learning standards documents also were assessed to determine how many states used the same or similar terminology in naming their completed standards documents.

In addition to variation in organization, terminology, and titles, coverage of areas of learning and content (i.e., academic subjects and developmental domains) was also examined within the 54 available pre-K age 4 standards documents. Standards headings within the 54 available pre-K standards were inspected to see if content in the following 10 areas of learning was present: language and literacy, approaches to learning, cognitive development, mathematics, social studies, science, creative arts, technology, social/emotional development, and physical development. The total number and percentage of states and territories that had standards content in each area of learning were calculated. The location of content (i.e., categorized as its own content area or under a different category name) was noted.

Enriching Content for Prekindergarten Age 4 Literacy Standards

In this study, *enriching content* refers to either teaching strategies or examples of children meeting the standards provided to help stakeholders, such as educators, use pre-K age 4 learning standards. Availability of enriching content was assessed through analysis of available pre-K age 4 literacy standards documents ($N = 54$). For each state and territory with accessible pre-K age 4 learning standards, availability and location of enriching content were noted. If examples of children meeting standards and teacher strategies were not located together with the actual pre-K age 4 learning standards, a secondary search assessed whether they were located elsewhere (i.e., a state's department of early childhood education or related websites).

Indicators and Strategies in Early Learning Standards Documents for Teaching Diverse Populations

Fifty-four available pre-K age 4 learning standards documents from 50 U.S. states, 3 U.S. territories, and the District of Columbia were examined to locate indicators and teacher strategies specifically developed for use with either ELLs or children with special needs. Standards documents were first thoroughly examined to assess whether content or, more specifically, terminology in document headings referenced either special education or ELL populations. When standards documents indicated the presence of such content, they were further examined to look for indicators and teacher strategies targeting these populations of children. Separate indicators and teaching strategies for ELL children or children with special needs were counted. Standards documents with specific language related to these populations were coded as including these additional indicators or strategies, or both.

Data Analysis

Descriptive statistics were calculated using SPSS and Microsoft Excel to analyze closed-ended survey responses and summarize the analyses of enriching content and various components of pre-K age 4 learning standards, including document titles, standards organization and terminology, and coverage of content areas across standards. Frequency counts were calculated to describe close-ended survey item response patterns across the participating states and territories; determine the number of levels and unique level labels within and across available preschool age 4 learning standards as part of the organizational analysis; summarize availability and location of enriching content for accessible pre-K age 4 learning standards; assess similarity across standards document titles; and summarize areas of content and learning covered within available pre-K age 4 learning standards across U.S. states and territories.

The examination of special education and ELL indicators and strategies within pre-K age 4 learning standards documents was summarized through counts of states and territories that included such content. Results from these analyses were displayed using MapLand12, an add-on program within Microsoft Excel that charted inclusion of ELL and special education indicators and teacher strategies onto geographic maps by state or territory.

All open-ended survey responses, interview data, and focus group discussion questions were analyzed using the constant comparative method of qualitative analysis (Glaser & Strauss, 1999) and NVivo qualitative data analysis software. This method of analysis includes an iterative process of open coding involving reading each piece of data and comparing it to other pieces of data to draw new meaning from the data as a whole. Categories or themes are established based on their frequent and consistent occurrence across data and are grounded in the data by coding supporting text for each theme. Thematic analyses were completed by coders who independently examined all transcripts for individual focus group, interview, and open-ended survey questions and developed and refined codes. Early stages of analysis included developing initial sets of codes that the coders discussed and modified, resulting in a set of themes and theme definitions that guided final coding of text to find support for themes. Final themes needed to occur frequently across and within transcripts. After coders agreed on final themes for a question, each independently identified all supporting text and quotations from the survey responses and focus group and interview transcripts for each theme. The final analysis step included discussion and review between coders to settle on coded text to support identified themes. Final themes are presented in the Findings section, along with examples of supporting quotations pulled from the question transcripts to illustrate theme meaning.

Additional steps were to taken to further analyze qualitative data for a small number of open-ended survey questions. Thematic analysis as explained earlier was conducted, resulting in a set of final themes that showed up most often across

survey responses. Next, the number of times each of the final themes was reflected in the survey responses was summed to quantify how often themes came up in the data. Specifically, the number of survey responses with supporting text reflecting a particular theme was counted. Response frequencies summarized the prevalence of final themes across survey responses for each question.

Findings

Findings from the online survey, focus groups, interviews, and analyses of standards documents are presented together by topic to provide an in-depth perspective on pre-K age 4 learning standards. The results address the following research questions to provide a cohesive story about what was learned about pre-K age 4 learning standards: (a) Why do we have pre-K age 4 learning standards? (b) What is the history of pre-K age 4 learning standards development? (c) How are pre-K age 4 learning standards developed, and for whom? (d) Who uses pre-K age 4 learning standards? (e) How do pre-K age 4 learning standards documents vary across the nation? (f) What resources are available to help teachers use pre-K age 4 learning standards? (g) Are there pre-K age 4 learning standards documents that contain specific information for ELL populations and children with special needs? (h) How do pre-K and kindergarten work together to align standards, and why is standards alignment important? and (i) What is the perceived value of having national pre-K age 4 learning standards? Survey data analysis findings are presented in the next section.

Why Do We Have Prekindergarten Age 4 Learning Standards?

Survey findings are reported for 53 of 56 surveys completed, resulting in a 95% response rate. The first survey question was an open-ended item asking respondents from the 53 surveyed states and U.S. territories to describe the purpose of having pre-K age 4 literacy standards. The thematic analysis for the question yielded a wide range of responses, with the seven major themes displayed in Table 1.

The large majority of respondents (70%) stated that they have standards to outline learning expectations for preschool children. Mentioned by more than half of respondents (55%), providing guidance for instruction was the second most common theme for having preschool standards. Additional key themes included standards serving as a resource for multiple stakeholders (38%), fostering alignment across the educational continuum (38%), and promoting school readiness (36%).

What Is the History of Prekindergarten Age 4 Learning Standards Development?

A series of closed- and open-ended survey questions traced the history and revision of preschool standards (see state-level data in Appendix E). Survey respondents reported the year pre-K age 4 literacy standards were originally developed; if and when revisions occurred; and whether standards are currently under revision, and why. The original development year data reported by 48 states, 4 territories, and the District of Columbia ($N = 53$) are illustrated in Figure 1.

The data show a long history of pre-K learning standards for 4-year-olds in the United States. A large spike in the number of pre-K age 4 learning standards is evident immediately after 2002. As stated earlier, the significant increase appears to coincide with the Good Start Grow Smart Initiative (White House, 2002).

Table 1 Key Themes About the Purpose of Prekindergarten Age 4 Learning Standards

Theme	Percentage
Provide expectations for skills and knowledge children need to be ready for kindergarten	70
Guide for educators (e.g., teaching, planning, professional development)	55
Serve as a resource for multiple stakeholders	38
Foster alignment with Grades 0–3 and kindergarten to Grade 12	38
Promote school readiness	36
Resource for families	34
Promote shared vision and common language within early childhood education	30

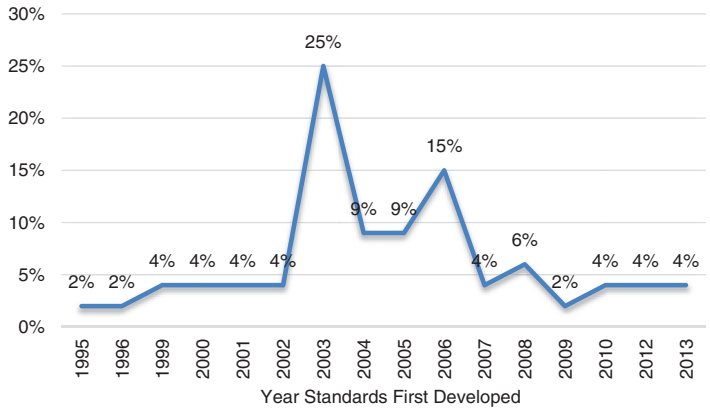

Figure 1 Original year that prekindergarten age 4 learning standards were developed. This figure displays the percentage of the 53 surveyed states and territories that reported that prekindergarten age 4 learning standards were developed during the years 1995–2013.

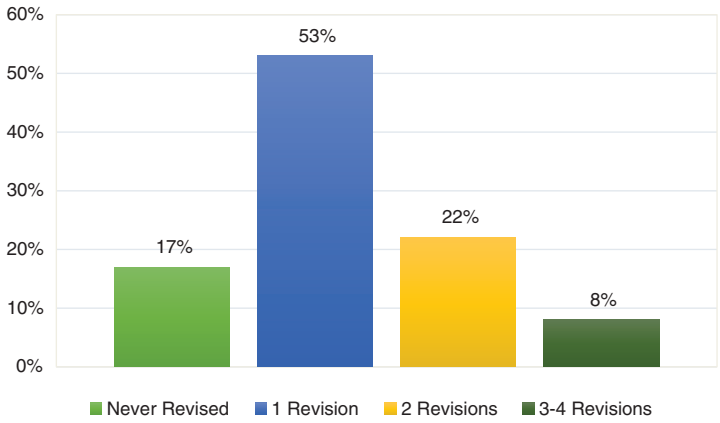

Figure 2 Number of reported revisions of prekindergarten age 4 learning standards.

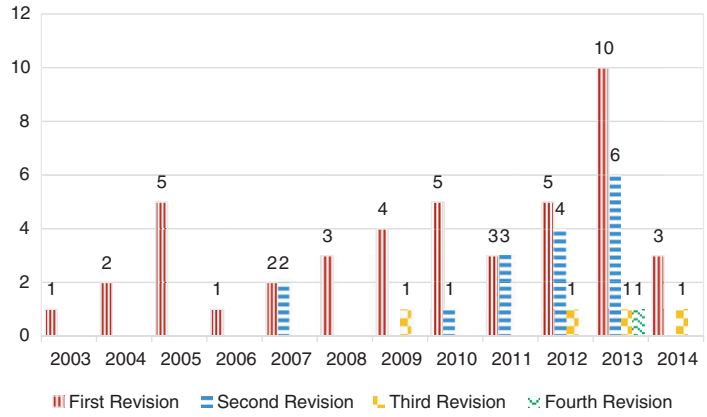

Figure 3 Revision history of prekindergarten age 4 learning standards. This figure displays the number of prekindergarten age 4 learning standards revisions that occurred [between 2003 and 2013 for the 53 surveyed states and U.S. territories.

Figures 2 and 3 illustrate that the majority of states and territories have revised their pre-K age 4 learning standards at least once after they were first developed. Figure 2 shows that nine states (17%) reported that as of spring 2014, their standards had not yet been revised.

The revision history data in Figure 3 reveal a recent trend of standards revisions as indicated by the large number of recent revisions in 2013.

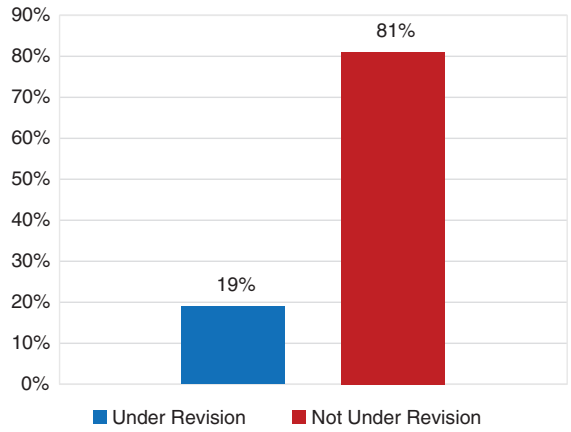

Figure 4 Revision status of current prekindergarten age 4 learning standards.

The recent spike in standards revisions may reflect the adoption of CCSS in many surveyed states and territories or possible receipt of a grant award (e.g., Preschool Development or Early Learning Challenge Grant) that may have required revision and also enabled states and territories to complete revisions through acquired funding (USDOE, 2011, 2015).

Figure 4 indicates that 19% of surveyed states and territories ($N = 10$) reported being in the process of standards revisions as of June 2014.

In response to an open-ended follow-up question only posed to this small subgroup ($N = 10$), respondents explained why their current pre-K age 4 learning standards are being revised. Updating the standards based on recent research and aligning their preschool standards with KCCSS or other state standards were most commonly mentioned as reasons for undertaking revision.

How Are Prekindergarten Age 4 Learning Standards Developed, and for Whom?

This section presents survey findings on how standards have been developed, who was involved in their development, what resources were used to assist in their development, and for whom standards were developed. Survey respondents were asked in two separate questions to first describe the process used to develop the original pre-K age 4 literacy standards and then describe the process used to develop the most recent completed revision or current set of pre-K age 4 literacy standards. Because separate analysis of each question produced very similar results, findings from the thematic analyses were combined and presented together. Respondents characterized the standards development process as (a) lengthy, taking a year or longer to complete; (b) completed in multiple phases and including multiple rounds of revision with diverse groups and gathering input from the public; (c) involving many committees along with groups of experts and various stakeholders working collaboratively to complete the work; (d) using research and multiple documents from other states for assistance in writing or revision; and (e) largely focusing on alignment with other standards (e.g., KCCSS) in recent standards development.

In two separate questions, survey respondents indicated the types of contributors involved in the original development and most recent revision of pre-K age 4 learning standards. Findings regarding contributors involved in the most recent revision, which mirrored findings about original standards development, are displayed in Figure 5.

Figure 5 illustrates that in the large majority of surveyed states and territories, a variety of key stakeholders, including state education department personnel (100%), early childhood educators (98%) and administrators (96%), individuals in higher education (96%), and policy makers (81%), participated in standards development and revision. Almost half of respondents (47%) reported parent involvement.

Survey respondents also reported on the types of resources that provided the foundation for pre-K age 4 literacy standards content. Table 2 displays the most commonly reported resources. More than half of survey respondents (55%) reported using research about young children's skills and knowledge. K–12 standards (36%), pre-K standards from other states (34%), and the Head Start framework (34%) also were often used resources.

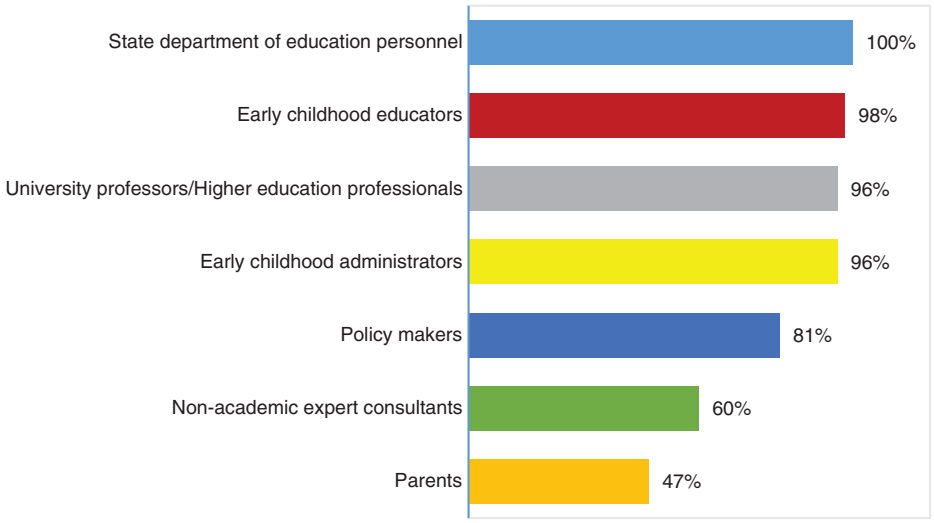

Figure 5 Contributors involved in developing and revising current prekindergarten age 4 learning standards. This figure summarizes the percentage of each type of contributor that was reported to be involved in the development and revision of current prekindergarten age 4 learning standards across the 53 surveyed states and U.S. territories.

Table 2 Most Common Resources Used for Prekindergarten Age 4 Learning Standards Development

Resources	% Reported
Research about young children's skills and knowledge	55
State K–12 standards (e.g., CCSS)	36
Head Start framework	34
Resources from organizations focusing on education, children, and families (e.g., NAEYC, Zero to Three)	34
Other states' prekindergarten standards	34
Best practice/professional development resources	23

Note. $N = 53$. CCSS = Common Core State Standards. NAEYC = National Association for the Education of Young Children.

Who Uses Prekindergarten Age 4 Learning Standards?

Access to standards-based education for children attending preschool was measured through a survey question asking respondents to indicate which preschool programs are required to use state early learning standards. As illustrated in Figure 6, 66% of surveyed states and territories reported that public school pre-K programs are required to use pre-K age 4 learning standards. These preschool programs operate in public school settings.

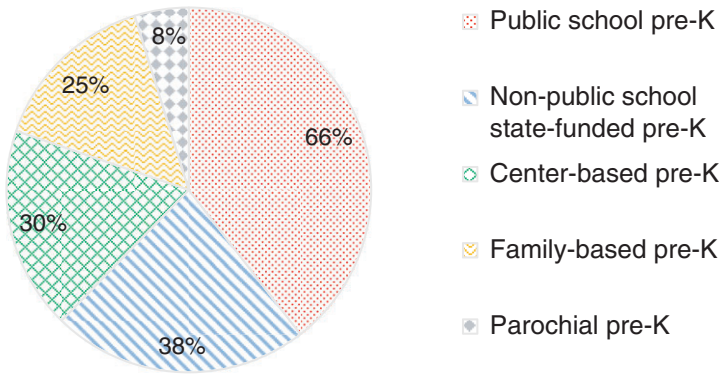

Figure 6 Types of prekindergarten programs that require prekindergarten age 4 learning standards. Data in this figure show the percentage of the 53 surveyed states and U.S. territories that reported that prekindergarten age 4 learning standards are required in each type of prekindergarten program.

For other types of preschool programs, fewer states and territories require standards. Only 38% of surveyed states and territories mandated standards use in state-funded programs that do not operate in public school settings. State-funded programs, public and private, are required to teach expectations linked to standards. Survey data indicate that center-based, or private, pre-K programs (30%) and family-based pre-K programs (25%) require use of standards less frequently. Collecting data about compliance by preschool programs that were mandated to use pre-K age 4 learning standards was beyond the scope of this study.

How Do Prekindergarten Age 4 Learning Standards Documents Vary Across the Nation?

This section summarizes what was learned about current preschool age 4 learning standards documents. Findings from the analysis of current pre-K age 4 standards documents describe a diversity of standards documents titles, variation in pre-K age 4 literacy standards documents organization, terminology, and coverage of areas of content and learning. Analysis of interview data highlights participants' thoughts regarding what makes standards documents comprehensive.

The variation in titles across the 54 available pre-K age 4 learning standards documents is presented in Table 3. A total of 24 different titles are used to name preschool learning standards documents across the nation. "Early Learning Standards," which is the title most commonly used for a standards document, only appears in 25% of the documents. The most common titles used beyond "Early Learning Standards" are "Early Learning and Developmental Standards" (16%) and "Early Learning Guidelines" (15%). The standards document title is the first element of information encountered. Wide variation in an element as simple as what we call learning standards documents could suggest to users that their content and meaning differ for children and educators across states and territories.

Table 3 Analysis of Prekindergarten Age 4 Learning Standards Document Titles

Unique standards document titles	*N*	Percentage	States/territories/D.C.
Early Learning Standards	14	26	Arizona, District of Columbia, Iowa, Kansas, Michigan, Minnesota, Mississippi, Missouri, Montana, New Hampshire, South Carolina, Vermont, West Virginia, Wisconsin
Early Learning and Developmental Standards	9	16	Connecticut, Florida, Georgia, Hawaii, Illinois, Louisiana, Ohio, Rhode Island, Tennessee
Early Learning Guidelines	8	15	Alaska, Guam, Idaho, Nebraska, New Mexico, Oklahoma, South Dakota, Virgin Islands
Early Learning and Development Guidelines	2	4	Colorado, Washington
Early Learning Foundations	2	4	Delaware, Wyoming
Developmental Standards	1	2	Alabama
Early Childhood Education Framework	1	2	Arkansas
Preschool Learning Foundations	1	2	California
Foundations to the Academic Standards for Young Children	1	2	Indiana
Early Childhood Standards	1	2	Kentucky
Early Childhood Learning Guidelines	1	2	Maine
Framework and Standards for Prekindergarten	1	2	Maryland
Curriculum Framework for English Language Arts and Literacy	1	2	Massachusetts
Pre-Kindergarten Standards	1	2	Nevada
Preschool Teaching and Learning Standards	1	2	New Jersey
Prekindergarten Foundation for the Common Core	1	2	New York
Foundations for Early Learning and Development	1	2	North Carolina
Pre-Kindergarten Content Standards	1	2	North Dakota
Child Development and Early Learning Framework	1	2	Oregon
Learning Standards for Early Childhood	1	2	Pennsylvania
Prekindergarten Guidelines	1	2	Texas
Prekindergarten Standards and Expectations	1	2	Puerto Rico
Early Childhood Core Standards	1	2	Utah
Foundation Blocks for Early Learning	1	2	Virginia

Note. $N = 54$ documents.

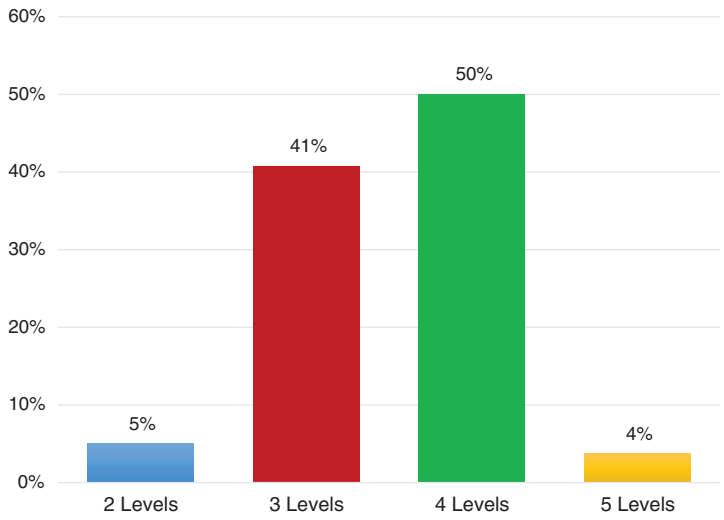

Figure 7 Patterns of organization found across prekindergarten age 4 literacy standards. This figure displays the percentage of the 54 prekindergarten age 4 literacy standards that are organized into two, three, four, or five levels.

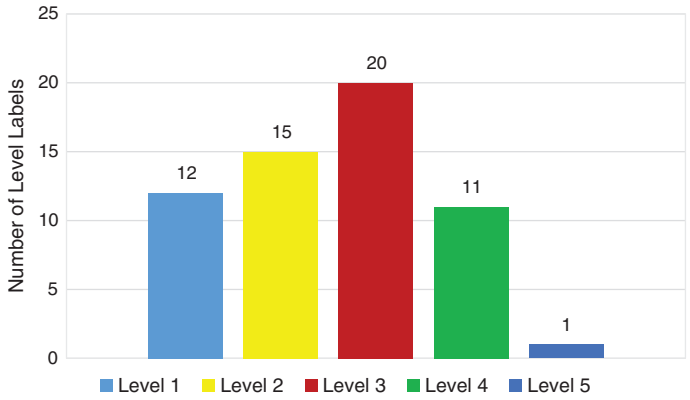

Figure 8 Number of terms used to label the levels organizing prekindergarten age 4 literacy standards.

The main focus of the organizational analysis is to examine variation in pre-K age 4 literacy standards organization by number of content levels and terminology. Given the breadth and depth of pre-K age 4 learning standards content, one content area was selected to serve as an example for the organizational analysis. Language and literacy was chosen for analysis because such content is included in all pre-K age 4 learning standards documents and because English language arts is one of the two areas covered in the KCCSS. Findings from this analysis are displayed in Figures 7–9. Current pre-K age 4 literacy standards are organized into a variety of multiple-level arrangements, with standards most commonly organized into four levels (see Figure 7); domain often represents the broadest level, followed by one to two levels of increased specificity often termed subdomains or strands, and then a specified indicator of learning as the final level. Appendix F provides state-level data on terminology used and number of levels across pre-K age 4 learning standards documents.

Findings from the organizational analysis also indicate wide variation in the terminology used to label the different levels of pre-K age 4 literacy standards content. Figure 8 shows the number of different terms at each of the five organizational levels across pre-K age 4 literacy standards.

At Level 3, literacy standards content is more detailed and is listed as more specific skills or indicators related to each standard. This level had the highest variability, with 20 unique labels.

The most common terms used to label the five identified levels across standards are displayed in Figure 9.

Domain (67%) is the most commonly used term for Level 1, the most global level of the standards. The consistency in Level 5 being labeled "indicator" is not surprising given that only two documents are organized into five levels. The high

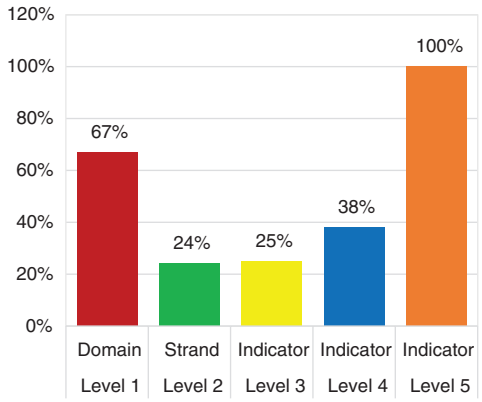

Figure 9 Common terms used to label the levels with prekindergarten age 4 literacy standards. This figure displays which labels were most frequently used (and how often they were used) to name each of the five levels of organization found within prekindergarten age 4 literacy standards.

Table 4 Examples of Variation in Prekindergarten Age 4 Literacy Standards Organization and Terminology

	Arizona	Arkansas	Idaho	Pennsylvania	Virgin Islands
Level 1	Standard	Strand	Domain	Learning area	Domain
Level 2	Strand	Benchmark	Subdomain	Standard area	Component
Level 3	Concept		Goal statement	Standard	Indicator
Level 4	Indicator		Developmental growth	Core and competency	
Level 5			Indicator		

level of variation in terminology across literacy standards is further reinforced by the most common labels at Levels 2, 3, and 4 being used only 24%, 25%, and 38% of the time, respectively.

Table 4 provides examples of organization and terminology that states and territories use to organize their pre-K age 4 literacy standards content. Displaying these examples of standards organization and terminology side by side further highlights the variation in levels and terminology.

This table, however, shows a troubling pattern. For example, when comparing Arizona and Pennsylvania, it becomes evident that the same terms are used to label different levels of organization; standard is used at Level 1 in Arizona but at Level 3 in Pennsylvania. An additional example is evident when comparing the use of the term "indicator" in the Arizona, Idaho, and Virgin Islands pre-K age 4 literacy standards documents. The inconsistency in organization and terminology hinders interstate communication about standards content and common understanding about the meaning and purpose of the various components of a standard.

An additional analysis examined coverage of key content areas (i.e., developmental domains and academic subjects) within current pre-K age 4 standards documents. Table 5 shows the number and percentage of states and territories that have standards content in each area of learning and content. Appendix G summarizes areas of content and learning coverage within pre-K age 4 learning standards in each U.S. state and territory.

All 54 available pre-K age 4 learning standards included language and literacy, mathematics, physical development, and social/emotional development content. The majority of available documents also included standards content in science (94%), creative arts (89%), social studies (78%), and approaches to learning (72%). Language and literacy standards content was always included under that category, whereas the other content was in many cases categorized under a different area of content and learning. Science content was organized under the science heading in 65% of available standards and under a different heading in 30% of available standards.

The organizational analysis yielded a detailed description of variation regarding what learning standards documents contain and how they are organized across the states and territories. Additional data were collected through interviews to provide insight into which aspects of preschool learning standards documents are perceived as most important for users.

Early childhood education leaders were asked in interviews to describe what they view as the key features of a preschool early learning standards document that make it a comprehensive guide for preschool expectations. Table 6 includes the

Table 5 Areas of Learning and Content Across Prekindergarten Age 4 Learning Standards in the United States, District of Columbia, and Territories

	ALC identified by name alone		ALC identified by name within another ALC		Total	
ALC	*N*	Percentage	*N*	Percentage	*N*	Percentage
Language and literacy	54	100	0	0	54	100
Social/emotional development	53	98	1	2	54	100
Physical development	53	98	1	2	54	100
Math	38	70	16	30	54	100
Science	35	65	16	30	51	94
Creative arts	38	70	10	19	48	89
Social studies	30	56	12	22	42	78
Approaches to learning	35	65	4	7	39	72
Cognitive development	20	37	0	0	20	37
Technology	6	11	10	19	16	30

Note. $N = 54$. ALC = area of learning and content.

Table 6 Interview Question: What Are the Key Factors of Your Early Learning Standards Document That Make It a Comprehensive Guide to Preschool Expectations?

Theme	Supporting quotation
Reflect a developmental continuum	Our standards are comprehensive in that they span birth through age 5 with specific learning goals. Then, there are examples of key indicators of mastery in each age range.
Whole-child focus (i.e., covering multiple developmental domains)	We are a state that definitely emphasizes development of the whole child, not just the emphasis on cognitive development or early language development and communication. We focus on all domains, and I think that's evident in our standards.
Useful for multiple stakeholders	We also have suggestions for family members, suggestions for teachers and caregivers, and then also suggestions for policy makers and community members. Recognizing that children don't achieve these things through osmosis or by themselves, they need the support of adults in order to achieve these benchmarks.
Include enriching content for educators (e.g., teaching strategies and examples of children meeting standards)	We have supportive practices pieces, which are opportunities that teachers can look at for activity suggestions, and suggestions for ways that they can actually enhance that skill development within a classroom.
Alignment with other standards	They're aligned to the K–3 standards, and part of our analysis was looking at K–3 and making sure that we provided a nice alignment to help kids transition to kindergarten.

five main themes and examples of supportive quotes that emerged from the qualitative analysis of interview transcripts for this question.

Interview data reveal that standards documents are viewed as comprehensive when they reflect a continuum of skills and knowledge to enable educators to adjust their instruction to young learners' current skill levels. Findings also indicate that comprehensive standards documents would provide guidance, such as teaching strategies, to help educators use the standards. Pre-K age 4 learning standards also need to be inclusive, serving as a useful tool for other stakeholders, such as parents, who may work alongside teachers to promote children's learning and development. Finally, a comprehensive standards document is aligned with kindergarten standards, in turn providing a roadmap to kindergarten readiness and enabling smoother transitions for preschool children as they enter school. Interview responses conveyed that various factors beyond learning expectations need to be considered when determining whether preschool standards documents are comprehensive and sufficient for meeting the needs of children, educators, and other key stakeholders.

Collectively, analyses of available pre-K age 4 learning standards documents in this section provided an update on what they look like across the nation. Wide variation persists across these standards documents. According to interview

participants, a comprehensive pre-K age 4 learning standards document represents far more than simply listing what children should know and be able to do at a certain age.

What Resources Are Available to Help Teachers Use Prekindergarten Age 4 Learning Standards?

This section focuses on teachers — the resources or supports available to help teachers understand and use preschool learning standards in their classrooms. Findings first summarize the direct analysis of enriching content within available pre-K age 4 learning standards documents. *Enriching content* was defined in this study as supplemental information, suggestions, or ideas that support teachers or other stakeholders as they use the standards to teach young children. Examples of enriching content include availability of teacher strategies and illustrations of children meeting standards. Additional findings from thematic analyses of interview and focus group data describe respondents' perspectives about the main types of standards-related resources and support, enriching content, and professional development and the ways that early learning standards adoption impacts preschool instruction. Findings from the analysis of enriching content are summarized in Figure 10.

Among the 54 U.S. states, territories, and the District of Columbia with preschool learning standards, 69% ($N = 37$) have teaching strategies and 59% ($N = 29$) have examples of children meeting the standards. Teaching strategies were located within the pre-K age 4 learning standards document in most states and territories (89%). Likewise, the large majority of states and territories with child examples (97%) included them as part of their learning standards documents. When enriching content was not included in the pre-K age 4 learning standards document, it was located in an associated document, such as an implementation guide. Enriching content availability and location for each state and territory is displayed in Appendix B.

Focus group discussion and interview data provide additional insights about available standards-related resources for teachers, in particular professional development tied to standards and the role of standards in shaping preschool instruction. Findings presented next summarize qualitative thematic analyses of the following questions: (a) How do your standards documents provide information to assist teachers in helping children meet the standards, and why might it be important to have standard-specific instructional strategies as part of the standards? (interview) (b) Why is it important to have initial and ongoing training for administrators and teachers around standards content and associated teaching? (interview), and (c) How has the state's adoption of pre-K standards impacted pre-K classroom instruction? (focus group discussion).

First, Table 7 summarizes the three main themes and supporting quotations that emerged from thematic analysis of interview responses about available information for teachers to help their students meet pre-K age 4 learning standards.

Interview respondents shared that enriching content as part of the pre-K age 4 learning standards makes them more manageable and user-friendly to educators and helps prevent their misuse. Responses also emphasized that enriching content presented along a developmental continuum is very helpful to teachers because they can view teacher strategies

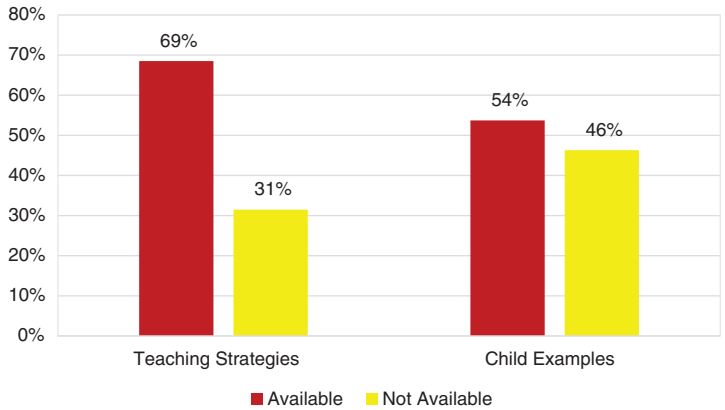

Figure 10 Availability of enriching content in prekindergarten age 4 learning standards. This figure displays the percentage of availability for the two types of enriching content — teaching strategies and examples of children meeting standards — within prekindergarten age 4 learning standards.

Table 7 Interview Question: How Do Your Standards Documents Provide Information to Assist Teachers in Helping Children Meet the Standards, and Why Might It Be Important to Have Standard-Specific Instructional Strategies as Part of the Standards?

Theme	Supporting quotation
Standards documents that include enriching content (i.e., teaching strategies and child examples) are useful	Our next piece is that teacher activity/teacher support piece . . . . That's where we'll produce a product. I think it's going to be a toolkit/toolbox. For each indicator we'll have examples of activities that the teacher could use, the language the teachers can use to teach that indicator.
Enriching content accompanying standards are presented as a developmental continuum	The example descriptors are helping, and they're also set up in levels, so they're exploring, developing, so they can see how children would progress.
Having access to a variety of resources increases standards understanding	We have an intranet system that offers professional development, opportunities for educators to network to professional learning communities online, book studies. There are even online courses into the *State* networks. What we're going to be doing is we're going to be building out a new early childhood pathway. On that pathway we'll be using mixed media. We'll be using some documents as a tool, films, and then some presentations. One of our foci would be that all these materials can be freely downloaded and used in multiple contexts.

Table 8 Interview Question: Why Is It Important to Have Initial and Ongoing Training for Administrators and Teachers Around Standards Content and Associated Teaching?

Theme	Supporting quotation
Important to train everyone	Certainly anything that teachers go to, directors could as well, but there is certainly more of a need for twofold. One, how can directors support what's going in classrooms, because you have some that just never go in classrooms. They own the business perhaps or they're doing the books, but they don't know what to look for even if they went in, and then also, so that they can support or at least not impede teachers that have received training and do know what they're doing. That's another frustration that we hear from teachers when they come to training is I wish my director was here because they won't let me do these kinds of things.
Training needs to be ongoing and dynamic	That initial training, some staff already has some of the child development background. They might have a teaching degree. There is also some staff that has come from the field without that knowledge. It is essential for both of those groups to have that basic training and then also training that is ongoing because we all learn at different levels. What is offered in a training today you might get something specific out of, but that same training in a month or in a year can offer a different level of training and what you take out of that training.
Availability of various types of training	There's a complete training of the standards, and it was developed so that it would be consistent across all the programs, so there was a training of trainers. It looks at the standards, it walks through the standards, how they connect with curriculum, how you use the standards. The training was done with our trainers who work with teachers with childcare centers, with Head Start. That's sort of the basic training, and then expanding on that, to go in deeper, there are additional trainings and there are resources that are being built; including on the early learning project, there are videos, benchmark videos, to see what this looks like in a classroom.

and child examples for different ages or developmental periods and, in turn, individualize instruction. Interviewees also discussed how combined access to various standards-focused resources, such as enriching content, in addition to other professional development supports, helps educators and administrators build deeper understanding of standards content and use, recognize effective standards-based teaching, and put the standards into action in the classroom.

Table 8 presents the three key insights emerging from qualitative thematic analyses of interview responses about standards-related professional development.

Table 9 Focus Group Question: How Has the State's Adoption of Prekindergarten Standards Impacted Prekindergarten Classroom Instruction?

Theme	Supporting quotation
Standards promote intentional instruction	The focus on intentional teaching has increased — has been reinvigorated and renewed with the adoption of our new standards, because we've had to revise all of our professional development around the use of the standards. I think it's brought up a lot of really good questions about what learning through play means, what the teacher's role is. When you have these standards that are much different than what your previous standards, these are the questions that come up. The implementation and the teacher's role and what you use standards for and then what that looks like in the classroom are all components, and then how do you assess?
Standards can lead to negative teaching practices, associated with assessment	It's that we've adopted assessments that aren't assessing all the content areas of the early learning standards, but yet we're expecting mastery of all those standards. We're wanting you to teach, and we're saying kids need to master these standards to move to the next grade, but yet our assessment is really just focusing on literacy and numeracy . . . . We're saying to teachers we expect you to teach all these standards and master all these standards but not assess them and this just makes the teachers end up only teaching the ones that we're going to assess. I think that's one thing that's difficult.
Standards drive targeted professional development for teachers and other early childhood professionals	Adopting the pre-K standards was foundational to creating a statewide training and coaching system — multiple systems — and it also proved to be a key resource as we developed our early educator competencies — our professional standards — and also our statewide assessment system — developmental assessments — are based on our standards. All of our statewide training systems are aligned with our standards, as well as our companion curriculum framework that gives guidance to teachers. All of our training systems include coaching, reflective practice, and mentoring.

Interview responses stressed the importance of training all stakeholders or individuals who teach, oversee, or need to understand what is being taught in preschool classrooms. Extending training to all key stakeholders, including those working within pre-K; individuals working outside of pre-K, such as educators or administrators in K–12; as well as parents and caregivers of preschool children was discussed as way to foster a common vision and expectations. Qualitative thematic analysis also revealed insights about the changing nature of learning standards and associated training. Interview respondents expressed that professional development needs to be continually updated to address changes in the standards. Another main theme from interviews stressed the need for professional development that is accessible, comprehensive, and completed through multiple and diverse trainings to effectively educate teachers with varying backgrounds and educational levels.

In addition to gathering information about the types of standards-related support and resources available for teachers, another question probed focus group participants' views regarding the impact adopting early learning standards has on pre-K instruction. Table 9 displays the three major themes that emerged from the focus group discussions, along with exemplary quotations supporting each theme.

Findings from the qualitative thematic analysis indicate that adopting pre-K age 4 learning standards has both positive and negative effects on instruction. Focus group participants discussed the positive trend of seeing preschool teachers become more intentional in their instruction. With the adoption of standards, preschool instructors are evaluating their own instruction and becoming more aware of what they can teach, and how they can differentiate their instruction to meet individual students where they are and then challenge them to grow. Another positive view revealed through analysis about standards adoption is its role in focusing professional development and other training resources to reflect use of preschool standards and help teachers put them into practice during training. Another insight from focus groups centered on participants' concerns about standards adoption and related accountability measures and assessments pushing teachers toward negative teaching practices. The focus on skills that will be assessed, such as mathematics and literacy, was discussed as being at the expense of other important areas of learning and similar to what is occurring in K–12 classrooms.

Collectively, these findings underscore the value of providing teachers with a variety of resources related to standards-based instruction, such as in-person and online professional development and enriching content within the standards document. These materials can assist teachers in improving their knowledge and practice as it relates to pre-K age 4 learning standards. In addition to being easily available, study participants strongly conveyed that professional development should be diverse, ongoing, intensive, and comprehensive. It should also target a variety of key stakeholders to promote shared understanding about standards content and use. Although preschool standards adoption was discussed as a positive driving force to focus teaching and professional development, focus group discussion also revealed a concern regarding teachers' misunderstanding about the role of standards. This misinterpretation can lead to negative teaching practices, such as favoring some domains over others based on what assessments will be administered to children.

Are There Early Learning Standards Documents That Contain Specific Information for English Language Learner Populations and Children With Special Needs?

This section includes previously reported findings (DeBruin-Parecki et al., 2015a) that summarize whether pre-K age 4 learning standards include supports to help teachers use the standards with diverse populations. The examination of the 54 available pre-K age 4 learning standards documents indicated which states and territories include indicators, teacher strategies, or both developed for use with either ELLs or children with special needs. The map in Figure 11 displays the presence of ELL indicators and strategies in standards documents across U.S. states and territories and the District of Columbia. Eleven states have both strategies and indicators, 4 states have only indicators, and 9 states have only teaching strategies. The remaining 30 standards documents and the large majority of states and territories do not include specific indicators or strategies addressing ELL populations. It is worth noting that some of these documents included general information about using the learning standards with ELLs, without providing further direction through indicators and strategies.

Even fewer states and territories were found to include supports for special education populations (see Figure 12). Only one state included both indicators and strategies. Two states included only special education indicators, and 10 states included only teaching strategies targeting children with special needs. More than half of the documents provided no separate indicators or strategies, or no support, for using the standards with children with special needs.

In sum, the majority of pre-K age 4 learning standards documents do not provide specific indicators or teaching strategies to address the needs of student populations like ELLs or children with special needs. Early childhood educators in

Figure 11 Variability in English language learner supports across prekindergarten age 4 learning standards.

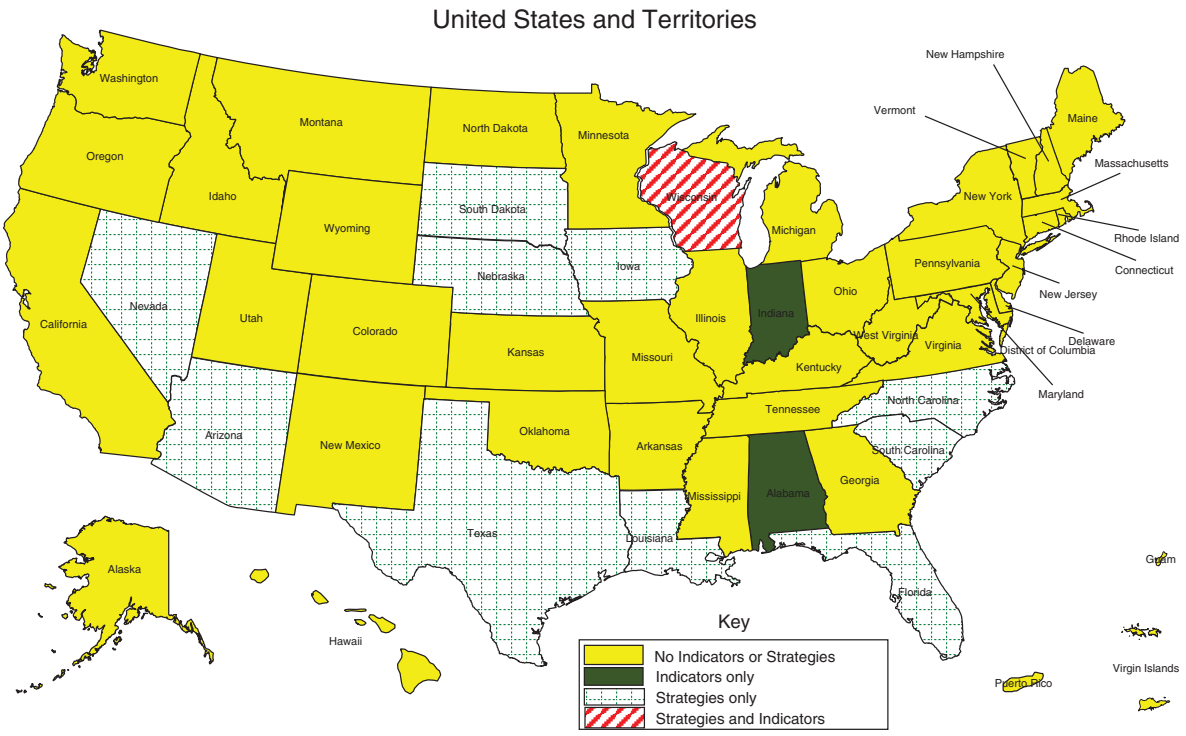

Figure 12 Variability in special education supports across prekindergarten age 4 learning standards.

many states and territories are thus on their own to make appropriate adjustments when working with these populations of young children.

How Do Prekindergarten and Kindergarten Work Together to Align Standards, and Why Is Standards Alignment Important?

This section presents findings from quantitative analysis of survey data and thematic analysis of focus group discussion focused on pre-K to kindergarten standards alignment. Survey respondents reported whether their state or territory aligned their preschool age 4 literacy standards or their overall early learning standards with kindergarten standards (e.g., KCCSS; NGA & CCSSO, 2010). They also described the alignment process. Findings from analysis of the following two focus group questions provide deeper insights into the standards alignment process and why it is important: (a) How do kindergarten and pre-K work together in your state to align the standards? (b) Why might it be important to align pre-K age 4 learning standards to kindergarten standards, in particular, the K ELA CCSS?

Forty-one of the 53 surveyed states and territories (78%) reported linking their pre-K age 4 literacy standards with the K ELA CCSS. See Appendix H for state-level survey data regarding alignment with the K ELA CCSS. A follow-up open-ended question asked those who reported alignment between their pre-K standards and the K ELS CCSS to describe the process of linking the standards. Thematic analysis of responses revealed the following: (a) Linking involves creating an alignment document that outlines where and how content aligns across standards; (b) pre-K age 4 literacy standards are developed or revised specifically to align content to the K ELA CCSS; (c) an alignment analysis is conducted to assess gaps in alignment between pre-K and K standards; and (d) multiple groups of experts and various stakeholders participate in development and review of content during standards alignment. Eighteen survey respondents, or just over one-third of all surveyed states and territories (34%) reporting alignment with the K ELA CCSS, responded to a follow-up close-ended survey question: Did the pre-K age 4 learning standards have to be revised to link them to the K ELA CCSS? The overall response revealed that revision of pre-K age 4 literacy standards was done to align them with the KCCSS.

Focus group data expand further on the topic of pre-K age 4 learning standards alignment with the question, How do kindergarten and pre-K work together in your state to align the standards? Table 10 summarizes the main themes that emerged from this discussion.

Table 10 Focus Group Question: How Do Kindergarten and Prekindergarten Work Together in Your State to Align the Standards?

Theme	Supporting quotation
Communication between prekindergarten and kindergarten	We are working to make sure that the Early Learning Standards are part of the conversation in early elementary and that then they have the tools to, at the community level, talk about alignment of instructional practices and communication across sectors, communicate about assessment results, and the alignment of the standards which would help them align their classroom practices.
Collaboration to build shared understanding	In a perfect world we would want to collaborate on standards development and revision, train together, mentoring between pre-K and K teachers, paired learning, collaboration, maybe pairing up one pre-K teacher with one K teacher maybe in the same district of school, shared resources, and then ongoing planning together and authentic useful collaboration.
Recognition of a developmental continuum	Our preschool standards are called foundations, and it also shows our infant/toddler standards that are also foundations. They see a continuum that starts from birth through infant/toddler and preschool. I think that helps communicate that this doesn't just start at kindergarten. It starts at birth.

Table 11 Focus Group Question: Why Might It Be Important to Align Prekindergarten Age 4 Learning Standards to Kindergarten Standards, in Particular, the Kindergarten English Language Arts Common Core State Standards?

Theme	Supporting quotation
Developmentally appropriate practice and resources	If you have a pre-K classroom, you may have a child who isn't on the pre-K indicator yet. I've got to look down at the 3-year-old; or I may have a child who is super advanced and has surpassed that pre-K indicator, so I need to look to the kindergarten.
Creates a developmental continuum	So you're creating a seamless system. Without alignment you have a disconnected system and that really makes transition from a birth-to-5 system into a formal school system disjointed for children, and it shouldn't be because it's our collective job to support children's learning and development.
Establishes clear expectations for educators, children, and families	It's important that our preschool pre-K teachers, families, and children understand what the new standards are so that we're appropriately preparing our children for that. For me, the biggest piece is the expectation. How do we know where our children are? How do we support them in their development? How do we celebrate their strengths so that we're not surprised at that late point in time when it just causes frustration on all ends for the children, for the families, for the educators?
Builds bridges across grades	There should be alignment. We have alignment with our standards from birth through Grade 3—meeting the academic standards—and it's a point of reference for communication among early childhood teachers, kindergarten teachers, and administrators—let's talk to each other. Let's communicate and let's have the same language.

Focus group participants discussed the following as characterizing what they have observed regarding pre-K to kindergarten standards alignment: pre-K and kindergarten stakeholders communicating, educators and administrators across pre-K and kindergarten working together, and stakeholders recognizing the value and need for creating a developmental continuum across grade levels. Findings suggest that standards alignment is viewed as an ongoing effort that is complex, multifaceted, and accomplished through various processes.

Additional focus group data provided further insight into the possible benefits of standards alignment. Participants discussed why it is of value to align pre-K age 4 literacy standards to kindergarten standards, in particular, the KCCSS. Themes and supporting quotations are displayed in Table 11.

Table 12 Focus Group/Interview Question: Why Might It Be Important to Have National Prekindergarten Age 4 Learning Standards?

Theme	Supporting quotation
Fosters equity	National standards could help ensure that children across the nation have the same opportunities to develop literacy skills and that children who move from one state to another are not left behind.
Consistency in language and expectations	Common vocabulary across not just the state, and it doesn't have to be a set vocabulary, but more common for the staff to understand what you're talking about and what they're talking about to each other as well as for the children and the parents.
Shared resources, funding, and collaboration	We talked about all of these corresponding efforts of producing videos, and so many states have done this and it's just a lot of money going to achieve mostly the same end, so I think it would be prudent if we could pool our resources.
Drives teaching and professional development	They don't understand. If they did, that whole issue of differentiation, knowing how to help children make progress, they'd know developmentally first they have to accomplish this and then this and then this and then I'll get them to where they're supposed to be.

The four main themes emerging from focus group discussion suggest that state early childhood education leaders view standards alignment as having positive implications for children, teachers, administrators, and parents/caregivers. Focus group participants discussed how aligning pre-K and kindergarten standards could inform professional trainings and standards-related resources and establish clear expectations, which in turn would help educators teach in developmentally appropriate ways. An additional insight from the focus groups highlighted standards alignment as providing the catalyst for communication and collaboration between grade levels to foster shared expectations about teaching along a developmental continuum.

Overall, findings from analysis of survey, focus group, and interview data indicate that standards alignment is largely viewed as a priority within early childhood education. Standards alignment was also discussed as having positive implications for preschool children and stakeholders.

What Is the Perceived Value of Having National Prekindergarten Age 4 Early Learning Standards?

Issues of equity are integrated throughout the field of early learning standards. Findings previously presented in this report indicate that current standards across the country vary in content and complexity as well as organization and descriptive language. Variability across standards can trickle down to differing expectations for children's learning and teacher instruction. Given this concern, study participants were asked to provide their insights about establishing national standards for pre-K age 4 children. Table 12 summarizes findings from the thematic analysis of focus group discussions and interview responses about the value of having national preschool age 4 learning standards.

The thematic analysis of interview responses and focus group discussions highlighted state early childhood directors' and administrators' positive attitudes toward establishing a national set of pre-K age 4 learning standards that could guide standards development and implementation across states and territories. Respondents discussed national preschool standards benefitting both children (i.e., fostering equitable educational opportunities) and educators (i.e., driving consistency and improving professional development). Interview and focus group data also showed that states on a larger scale could potentially benefit from established national pre-K age 4 learning standards because they may be in a better position to collaborate and share resources with one another. These data represent the views of one particular group composed of early childhood experts and leaders, each employed by a specific state or territory.

The next section of this report draws conclusions about topics related to pre-K age 4 learning standards in the context of past research and current findings. This is followed by informed policy recommendations to guide future dialogue and work on issues related to pre-K age 4 learning standards.

Conclusion

Examining past research along with the analyses of state standards documents, surveys, focus groups, and interviews presented in this report leads to a variety of conclusions and implications on multiple topics related to early learning

standards. This section specifically focuses on four main areas: (a) variations in pre-K age 4 learning standards documents, (b) alignment of pre-K age 4 learning standards, (c) influence of pre-K age 4 learning standards adoption on teaching and professional development, and (d) national pre-K age 4 learning standards.

Variations in Prekindergarten Age 4 Learning Standards Documents

Similar to previous research findings (e.g., Neuman & Roskos, 2005; Scott-Little et al., 2006), one clear outcome of our study is documentation of the enormous amount of variation in standards documents that has persisted over time. As demonstrated in this report, standards documents continue to have varying titles, levels of organization, terminology, content, enriching content, and attention paid to diversity (see Figures 7–12, and Table 4). Findings from focus group and interview data indicate that this variation makes it difficult for early childhood leaders to communicate or collaborate with each other regarding their pre-K age 4 learning standards. A standardization of language and organization could allow for more effective interstate discussion and lead to overall improvement in standards documents.

While this study investigated pre-K age 4 literacy standards, exploring organization and language differences, future studies that examine these issues can expand to all early learning standards domains and can look much more closely at content. To explore content and eventually determine quality, a method of evaluating the content of standards documents needs to be developed. To create this means of evaluation would require content experts in each standard domain to meet and use their expertise coupled with a careful examination of related empirical research studies to determine the content that each domain should include. The National Early Literacy Panel Commission (NELP) developed a similar process to this when it was convened in 2002. NELP used this process to determine the early literacy skills that young children should learn on their way to becoming readers (National Early Literacy Panel, 2008). Many more empirical studies that focused on early literacy skills, including areas that previously did not have enough supportive evidence, such as comprehension, have been released since the 2008 NELP report was written. To update the NELP report, a new panel of early literacy experts is needed to review the current empirical research to determine which skills young children should learn in this area before entering kindergarten. This same process can be used for each of the varied pre-K age 4 learning standards domains. Until there are research-supported, agreed-upon standards of some type for each domain, it may be impossible to evaluate the quality of content of each state's, territory's, or the District of Columbia's pre-K age 4 standards document.

Alignment of Prekindergarten Age 4 Learning Standards

Although states and territories may all have different standards documents with varied organization, terminology, and content, the majority of states and territories have continued to align their standards to standards of other age- or grade-level groups, including possible alignment to the CCSS. There is tremendous variability in how states align standards (Scott-Little et al., 2007). Each state decides on the target of alignment. Standards can be aligned to a variety of age- or grade-level groups that may range from just aligning pre-K to kindergarten standards to aligning a much wider range, such as birth to kindergarten or to Grade 3 (Kagan, 2012). Traylor (2012) stated, "Early childhood programs should be aligned with the mission and goals of the K–12 education system" (p. 47). She is a proponent of pre-K to Grade 3 alignment that allows teachers to understand what students have already learned and provides them with guidance for what they must learn next. This type of alignment affords a clearer path to accountability at the lower grade levels. Alignment across grade levels is often conceived of as a developmental continuum (Strickland, 2013).

Data reported in this study indicate that state leaders believe alignment of standards can also have an impact on instructional practices and inform professional development so that educators are teaching in developmentally appropriate ways and are able to meet children where they are in their learning and development. This finding is in agreement with findings reported previously (NAEYC, 2009, 2015a). Further results from this study report that alignment can establish clear expectations for educators, children, and families and can build bridges across grades. On a larger scale, study findings suggest that standards alignment could serve as a catalyst for collaboration between educational levels and foster shared understanding and expectations across the educational continuum.

Although there is a discussion in the literature addressing the need for standards, curriculum, and assessment to be aligned within (horizontal alignment) and between age groups (vertical alignment), participants in this study did not address these differences clearly (Scott-Little, 2006; Scott-Little & Reid, 2010). Each state has its own means of aligning standards, and most often these methods are not publicly shared or published (Kagan, 2012; Scott-Little et al., 2003;

Scott-Little et al., 2007). In this study, there was not a great deal of discussion about curriculum and standards, and less about assessment being directly linked to specific standards other than a concern about overtesting cognitive skills.

Effective assessment is linked to early learning standards to establish what children know and can do (Kagan, 2012). One problem that arises with aligning assessment with standards is the content of pre-K age 4 standards documents. Early learning standards go beyond just academics and take a whole-child perspective (Daily et al., 2010). The content of pre-K age 4 learning standards documents includes domains representing cognitive skills such as mathematics and literacy but also contains domains representing noncognitive skills such as social/emotional skills, physical development, and approaches to learning. DellaMattera (2010) found in her study of four New England states that testing of preschool children has traditionally focused only on cognitive skills. Meisels (2007) warned that formal tests of young children often neglect social/emotional skills and approaches to learning, skills that have traditionally been more difficult to assess. Aligning pre-K age 4 learning standards to the KCCSS does most often focus teaching and accountability on literacy (language arts) and mathematics, the only two domains represented in the KCCSS.

Future work in the area of pre-K standards alignment can fill in many of the gaps in the literature, such as the process states are using to align their standards and to what grade levels. Examining the procedures used can provide clear information as to commonalities and differences among states and territories and assist in determining which methods are most efficient and work most effectively. In addition, it is important to explore which states have found ways to align domains other than those typically thought of as cognitive skills. There is discussion now about the importance of not only aligning up but also aligning down so older children would have standards such as social/emotional standards that focus more on the whole child (NAEYC, 2012). Finally, a much closer look at how states and territories align pre-K age 4 learning standards with curriculum and assessment is needed (Scott-Little et al., 2007). Aligning standards with curriculum and assessment can have a direct effect on instructional methods.

Influence of Prekindergarten Age 4 Learning Standards Adoption on Teaching and Professional Development

In this study, early childhood state directors and/or leaders were asked three questions related to the impact of pre-K age 4 learning standards adoption on teaching and professional development. Responses to the question regarding how standards documents provide information and strategies to teachers to assist them in helping children meet the standards focused on the importance of enriching supplemental content. The consensus was that providing teachers with enriching content linked to the standards, such as teaching strategies and child examples, can give teachers practical knowledge to use when implementing standards-based instruction in their own classrooms. When asked about the importance of initial and ongoing professional development for teachers, several key points were made, including the need to include others, such as administrators, in the training and having continuous, dynamic, and various kinds of training available. Finally, participants in the study were asked the impact on preschool classroom instruction when pre-K age 4 learning standards are adopted by states, territories, and the District of Columbia. Results reveal that adopting standards promotes intentional teaching and that standards adoption can improve teaching through engaging, standards-targeted professional development. In addition to reporting positive outcomes for adopting early learning standards, there was also some discussion of negative effects, such as teaching to the test, that is, whatever standards content the state decides to test for accountability purposes. This can create a focus on specific standards domains that get more instructional emphasis, leaving other standards domains out of the picture, an issue discussed earlier, in the introduction section on alignment

Classroom instruction related to standards is often not easy for teachers to accomplish and frequently results in pushing teachers with low levels of education and training to move to direct teaching that emphasizes rote learning matched to specific cognitive skills such as literacy and mathematics (DellaMattera, 2010). According to Nitecki and Chung (2013), "if we make preschool about drills and memorization, we may well damage the child's natural curiosity, and enthusiasm for school" (p. 53). Children need to learn more than cognitive skills. It is important that they develop social/emotional and executive functioning competencies that work together with cognitive skills to shape their minds for more than just academic learning: "*Students learn what they are taught* when the teaching is done effectively and thoughtfully" (Elmore, 2002, p. 31). The data presented in this report indicate that directors and leaders of early childhood education participating in this study understand how important it is to develop a variety of tools and resources to assist teachers in adopting standards-based instruction. These tools and resources can help teachers to go beyond teaching only cognitive skills to teaching noncognitive skills, leading to more integrated, effective, thoughtful instruction.

A major point of concern emerging from the data and the literature is the variation in professional development across states and territories and the possible inability of teachers to access whatever is available (Cox, Hollingsworth, & Buysse, 2015). This also relates to differences in the depth and breadth of standards and the importance individual states place on them. In regard to differences in pre-K age 4 learning standards documents related directly to professional development, the analysis of supplemental content in this report revealed that many states with standards had not yet developed teacher strategies and/or examples of children meeting the standards to assist teachers in developing and understanding standards-based instruction. Owing to differing levels of education, including varying understanding of the developmental continuum, diverse professional development opportunities, and funding levels, some teachers are provided more assistance in implementing standards-based teaching and have a clear advantage in developing a greater understanding of how to incorporate standards into their daily instructional planning (Scott-Little, 2006). Teachers with many years of teaching experience and little professional development around standards also need sufficient guidance to ensure that their instruction based on standards focuses on the whole child and is developmentally appropriate (Nitecki & Chung, 2013).

Future work in this area mirrors concerns of current study participants who indicate that they are working toward designing user-friendly professional development resources using a variety of platforms. These resources include online modules and other resources with constant accessibility, in-person training, coaching models, and enrichment of standards documents to provide teaching strategies and student examples. Having standards is not enough. Teachers benefit from understanding how to use them in their classrooms and also how to go beyond teaching to one standard at a time. Increasing effective and knowledge-rich professional development opportunities around standards is a critical piece of ensuring that standards are used appropriately in the classroom. In addition, working with institutions of higher education to keep them informed of changes to early learning standards allows this information to be updated and integrated into early childhood teacher education classes and can also lead to a positive effect on standards-based classroom instruction (Scott-Little & Reid, 2010). Another concern that requires future research is how to evaluate the professional development that is being used currently (Cox et al., 2015).

National Prekindergarten Age 4 Learning Standards

Finally, there is the issue of pre-K age 4 national standards. Children from disadvantaged populations who need high-quality, standards-based preschool are less likely to receive it. Higher quality preschools, typically state run, are more likely to be standards based (Kagan, 2012; Scott-Little, 2006). With only 33% of children in poverty attending Head Start (Child Trends Databank, 2014), and 29% of 4-year-olds, most in poverty, attending state-funded preschool (Barnett et al., 2015), a large number of age 4 preschool children of low socioeconomic status (SES) are not receiving standards-based preschool educations. Children who are may be receiving differing educations due to varying early learning standards across the country and its territories (Reid & Kagan, 2015; USDOE, 2015). A high-quality preschool education can ameliorate poor academic outcomes that are often expected for children of low SES and set them on a more positive educational trajectory (Garcia & Weiss, 2015; Heckman et al., 2010). Millions of poor young children are not afforded the opportunity to attend high-quality preschool or preschool at all (Barnett et al., 2015). This leads to the greatest inequities in learning opportunities.

Participants in this study provided surprising positive outcomes when asked why it might be important to have national pre-K age 4 learning standards. Overwhelmingly, throughout conversations and interviews, early childhood leaders and administrators affirmed their perception of the usefulness of having pre-K age 4 national learning standards. The data indicated that having these standards would allow for more collaboration and communication among states and territories, provide more equitable expectations for all children, allow for consistency in language and organization of standards, and drive effective teaching and professional development. Although conversations around this question were very positive, there were also comments about permitting states to continue to create their own teacher strategies and child examples, decide on their own curricula and assessments, as well as professional development, to allow for their own unique child populations. As Scott-Little (2006) has stated, "standards do not equal standardization, they define *what* we should be teaching, not *how*" (p. 9).

Daily et al. (2010) have stated that "a national conversation is emerging about the variances and commonalities associated with what children should know and be able to do to be prepared for school success" (p. 5). The work ahead for developing national pre-K age 4 standards is going to be part of a long and difficult process that will involve deep conversation, collaboration, and compromise among U.S. states and territories. Future research will continue to shine a light

on the persistent wide variation in current standards, the need for more focus on diversity in standards documents, and the inequities in learning opportunities for poor children and their teachers. The major question that will be continually asked in these discussions is: How is it beneficial for early learning guidelines to be consistent? A foremost worry is that, if the development of preschool national standards is similar to the development of the K – 12 standards, they will become a rigid set of guidelines that ignores research on child development (Brown, 2007; Daily et al., 2010).

To strongly consider the creation of national pre-K age 4 learning standards, researchers and early childhood experts must work to create research-based accepted content in each standard domain. The agreed-upon research-based content of each domain can then be used to guide the writing of pre-K age 4 national learning standards. Currently the inability to evaluate the quality of current state, U.S. territory, and District of Columbia pre-K age 4 learning standards continues to underscore the possible need for a national set of preschool standards, or at the very least national guidelines for writing preschool standards. Having pre-K age 4 learning standards agreed upon nationally could ensure that all states and territories are using high-quality comprehensive early learning standards, providing a more equitable education for young children.

In this report, we have presented analyses of the views of state directors of early childhood education regarding issues related to pre-K age 4 learning standards. As stated throughout the conclusion, much is still to be learned about the early learning standards – related topics explored in this report. In the final section, policy recommendations that resulted from this research are presented.

Policy Recommendations

The following policy recommendations emerged based on findings from surveys, focus groups, and interviews described in this report:

- design research-based, agreed-upon content for each domain present in standards documents to allow for the evaluation of the content and quality of current pre-K age 4 learning standards across the country and territories
- consider use of similar organization and terminology in early learning standards documents to allow for clearer communication and comparisons across states
- encourage alignment across domains beyond language and literacy and mathematics
- plan effective and consistent joint professional development for pre-K and kindergarten and pre-K to Grade 3 teachers to promote understanding of the developmental continuum and how to incorporate developmentally appropriate practice into everyday standards-based instruction
- determine methods for evaluating the effects of varying forms of professional development related to standards-based instruction
- discuss the creation of national standards or guidelines for pre-K age 4 as a possible beginning solution to equity issues affecting young children attending standards-based preschools

Further policy recommendations result from the integration of the related literature presented earlier in this report and focus group conversations that went beyond the prescribed questions:

- add separate indicators and detailed strategies within standards documents to assist teachers with instruction for ELL populations and for children with special needs
- make state and territory alignment processes more visible to include methods of aligning pre-K age 4 learning standards to curriculum and assessment
- share funding among states, the District of Columbia, and U.S. territories to allow for communication, collaboration, and avoidance of repetition of products and trainings

Each of these policy recommendations has the potential to improve early learning standards across U.S. states, U.S. territories, and the District of Columbia and to promote clearer communication. Research-based early learning standards that include provisions for diverse populations, that are carefully aligned with kindergarten and K – 3 standards, and that are coupled with assessments linked to those standards, along with effective, multimodal, and ongoing professional development, can assist teachers in designing standards-based instruction to best help young children learn what they need to know before entering kindergarten.

Acknowledgments

The authors wish to acknowledge the many individuals involved in various phases of the Standards Study. Thank you to Dr. Michael Nettles and Jonathan Rochkind, who strongly supported this project from conception and reviewed several drafts of the report as it evolved through completion. Thank you to the following external reviewers: Drs. Vivian Gadsden, Dorothy Strickland, Barbara Wasik, Anne Marie Hindman, Jamie Zibulsky, and Stephanie Curenton, whose expertise in early childhood education and literacy provided us with insightful feedback on our survey tool. Burt Fried worked tirelessly with the authors to transfer the survey onto an online platform and trouble-shoot during survey administration. Troy Shine contributed to the report data analysis and researched national standards and equity issues. Several ETS colleagues provided feedback on the soundness of the online survey instrument prior to administration and reviewed initial drafts of the policy report manuscript while in technical review. Thank you to Drs. Susan Neuman, Catherine Snow, Ed Greene, and Patricia Gandara for your insights and comments while serving as external reviewers for the report. Kimberlea Fryer assisted in coordinating and guiding us through the ETS technical review and Wiley production processes. A special thanks to the state leaders in early childhood education across the U.S. states and territories and the District of Columbia who participated in our study and provided insightful information and discussion about early learning standards, making this report possible.

References

Barnett, S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *Future of Children, 5*(3), 25 – 50.

Barnett, S. W., Carolan, M. E., Squires, J. H., Clarke-Brown, K., & Horowitz, M. (2015). *The state of preschool 2014.* New Brunswick, NJ: National Institute for Early Education Research.

Bodrova, E., Leong, D. J., Paynter, D. E., & Semenov, D. (2000). *Framework for early literacy instruction: Aligning standards to developmental accomplishments and student behaviors: Pre-K through kindergarten*. Aurora, CO: Mid-Continent Research for Education and Learning.

Bowman, B. T. (2006). Standards at the heart of educational equity. *Young Children, 61*(5), 42 – 48.

Bracken, B. A., & Crawford, E. (2009). Basic concepts in early childhood educational standards: A 50-state review. *Early Childhood Education Journal*, *37*, 421 – 430.

Brown, C. P. (2007). Unpacking standards in early childhood education. *Teachers College Record, 109*(3), 635 – 668.

Cascio, E. U., & Whitmore Schanzenbach, D. W. (2013). The impacts of expanding access to high-quality preschool education. *Brookings Papers on Economic Activity, 1*, 127 – 178.

Child Trends Databank. (2014). *Head start*. Retrieved from http://www.childtrends.org/?indicators=head-start

Common Core State Standards Initiative. (2015). *Standards in your state.* Retrieved from http://www.corestandards.org/standards-in-your-state/

Cox, M. E., Hollingsworth, H., & Buysse, V. (2015). Exploring the professional landscape: Summary from four states. *Early Childhood Research Quarterly*, *32*, 116 – 126.

Cunha, F., Heckman, J., Lochner, L., & Masterov, D. (2006). Interpreting the evidence on life cycle skill formation. In E. Hanushek & F. Welch (Eds.), *Handbook of the economics of education* (pp. 698 – 812). Amsterdam, Netherlands: Elsevier.

Daily, S., Burkhauser, M., & Halle, T. (2010). A review of school readiness practices in the states: Early learning guidelines and assessments. *National Civic Review, 100*(4), 21 – 24.

DeBruin-Parecki, A., & Slutzky, C. (2014, June). *Examining pre-K age 4 literacy standards across the United States and territories: What determines kindergarten literacy readiness?* Paper presented at the meeting of the National Association for the Education of Young Children Institute for Early Childhood Professional Development, Minneapolis, MN.

DeBruin-Parecki, A., Slutzky, C., & Shine, T. (2015a, July). *National portrait of pre-K learning standards and kindergarten readiness: A comprehensive study*. Paper presented at the meeting of the International Literacy Association, St. Louis, MO.

DeBruin-Parecki, A., Slutzky, C., & Shine, T. (2015b, April). *Searching for equity: An examination of literacy standards across the nation and U.S. territories.* Paper presented at the meeting for the American Educational Research Association, Chicago, IL.

DellaMattera, J. (2010). No preschooler left behind: Preschool policies in the NCLB world. *Journal of Educational Research & Policy Studies, 10*(1), 35 – 49.

Douglass, A., Carter, A., Smith, F., & Killins, S. (2015). Training together: State policy and collective participation in early educator professional development. *New England Journal of Public Policy, 27*(1), 1 – 13.

Education Commission of the States. (2015). *Pre-K alignment.* Retrieved from http://www.ecs-commoncore.org/implementation-issues/curriculum/pre-k-alignment/

Elmore, R. F. (2002). *Bridging the gap between standards and achievement*. Washington, DC: Albert Shanker Institute.

Fitzpatrick, M. D. (2008). Starting school at four: The effect of universal pre-kindergarten on children's academic achievement. *BE Journal of Economic Analysis & Policy, 8*, 1–38.

Garcia, E., & Weiss, E. (2015). *Early education gaps by social class and race start U.S. children out on unequal footing: A summary of the major findings in the inequalities at the starting gate*. Retrieved from http://www.epi.org/publication/early-education-gaps-by-social-class-and-race-start-u-s-children-out-on-unequal-footing-a-summary-of-the-major-findings-in-inequalities-at-the-starting-gate/

Glaser, B., & Strauss, A. (1999). *The discovery of grounded theory: Strategies for qualitative research*. New York, NY: Aldine Transaction.

Gormley, W. T., Phillips, D., & Gayer, T. (2008). Preschool programs can boost school readiness. *Science, 320*, 1723–1724.

Gronlund, G. (2014). *Make early learning standards come alive: Connecting your practice and curriculum to state guidelines* (2nd ed.). St. Paul, MN: Redleaf Press.

Halpern, R. (2013). Tying early childhood education more closely to schooling: Promise, perils, and practical problems. *Teachers College Record*, *115*, 1–28.

Head Start. (2015). *Head Start program performance standards and other regulations.* Retrieved from http://eclkc.ohs.acf.hhs.gov/hslc/standards/hspps;http://eclkc.ohs.acf.hhs.gov/hslc/standards/hspps

Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., & Yavitz, A. (2010). The rate of return to the High Scope Perry Preschool Program. *Journal of Public Economics, 94*, 114–128.

Heckman, J. J., Pinto, R., & Savelyev, P. A. (2013). Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *American Economic Review, 103,* 1–35.

Hood, L., Hunt, E., & Okezie-Phillips, E. (2009, April). *Building a seamless learning continuum: Looking at the role of leadership to bridge the gap between pre-K and K–12 care and education systems.* Paper presented at the meeting of the American Educational Research Association, San Diego, CA.

Hunt, E., Hood, L., Hrdlicka, J., & Rutherford, K. (2012, April). *Policies, practices, and leadership to create aligned and integrated P–12 learning systems in two states and Ontario.* Paper presented at the meeting of the American Educational Research Association, Vancouver, BC.

Kagan, S. L. (2012). Early learning and development standards: An elixir for early childhood systems reform. In S. L. Kagan & K. Kauerz (Eds.), *Early learning systems: Transforming early learning* (pp. 55–70). New York, NY: Teachers College Press.

Kagan, S. L., Scott-Little, C., Reid, J. L., Gomez, R., & Friedlander, J. (2011). *Georgia's early standards alignment studies: Executive summary*. Retrieved from the Georgia Department of Early Care and Learning website: http://gelds.decal.ga.gov/Documents/Executive_Summary.pdf

Kagan, S. L., & Tarrant, K. (2010). *Transitions for young children: Creating connections across early childhood systems*. Baltimore, MD: Brookes.

Kohler, M., Christensen, L., & Kligo, J. (2012). Developmentally appropriate practice. *Childhood Education*, *88,* 407–412.

Meisels, S. J. (2007). Accountability in early childhood: No easy answers. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the age of accountability* (pp. 31–47). Baltimore, MD: Brookes.

National Association for the Education of Young Children. (2009a). *Developmentally appropriate practice in early childhood programs serving children from birth to age 8: Framing the issues* [Position statement]. Washington, DC: Author.

National Association for the Education of Young Children. (2009b). *Where we stand on early learning standards*. Washington, DC: Author.

National Association for the Education of Young Children. (2012). *The Common Core State Standards: Caution and opportunity for early childhood education*. Washington, DC: Author.

National Association for the Education of Young Children. (2015a). *Developmentally appropriate practice and the Common Core State Standards: Framing the issues.* Washington, DC: Author.

National Association for the Education of Young Children. (2015b). *NAEYC early childhood program standards and accreditation criteria and guidance for assessment*. Retrieved from http://www.naeyc.org/academy/files/academy/Standards%20and%20Accreditation%20Criteria%20%26%20Guidance%20for%20Assessment_10.2015.pdf

National Association for Education of Young Children & National Association of Early Childhood Specialists in State Departments of Education. (2002). *Early learning standards: Creating the conditions for success* (Joint position statement). Washington, DC: Author.

National Association of Elementary School Principals. (2011). *Building and supporting an aligned system: A vision for transforming education across the pre-K-grade three years.* Retrieved from http://www.naesp.org/resources/1/NAESP_Prek-3_C_pages.pdf

National Center for Education Statistics. (2015). *Preprimary enrollment.* Retrieved from https://nces.ed.gov/programs/coe/indicator_cfa.asp

National Clearinghouse for English Language Acquisition. (2011). *Key demographics and practice recommendations for young English language learners.* Retrieved from http://www.ncela.us/files/uploads/9/EarlyChildhoodShortReport.pdf

National Early Literacy Panel. (2008). *Developing early literacy: Report of the National Early Literacy Panel*. Jessup, MD: National Institute for Literacy.

National Governors Association. (2012). *Governor's role in aligning early education and K–12 reforms: Challenges, opportunities, and benefits for children.* Washington, DC: Author.

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. Washington, DC: Author.

National Research Council. (2001). *Eager to learn: Educating our preschoolers.* Washington, DC: National Academy Press.

Neuman, S. B., & Roskos, K. (2005). The state of state pre-kindergarten standards. *Early Childhood Research Quarterly, 20*, 125–145.

Nitecki, E., & Chung, M. (2013). What is not covered by the standards: How to support emergent literacy in preschool classrooms. *Language and Literacy Spectrum, 23*, 46–56.

No Child Left Behind Act of 2001, 20 U.S.C. § 6301 *et seq.* (2002).

Odom, S. L., Buysse, V., & Soukakou, E. (2011). Inclusion for young children with disabilities: A quarter century of research perspectives. *Journal of Early Intervention, 33,* 344–356.

Office of Head Start. (2014). *Head Start program facts fiscal year 2014.* Retrieved from http://eclkc.ohs.acf.hhs.gov/hslc/data/factsheets/docs/hs-program-fact-sheet-2014.pdf

Office of Head Start. (2015). *Head Start early learning outcomes framework: Ages birth to five*. Retrieved from http://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

Reid, J. L., & Kagan, S. L. (2015). *A better start: Why classroom diversity matters in early education.* Retrieved from http://www.prrac.org/pdf/A_Better_Start.pdf

Scott-Little, C. (2006). Standing at a crossroads: Next steps to maximize the potential benefits of early learning standards. *Young Children, 61*(5), 1–5.

Scott-Little, C. (2010). Development and implementation of early learning standards in the United States. In B. Baker, P. Peterson, & B. McGraw (Eds.), *International encyclopaedia on education* (pp. 132–137). Amsterdam, Netherlands: Elsevier.

Scott-Little, C., Kagan, S. L., & Frelow, V. S. (2003). Creating the conditions for success with early learning standards: Results from a national study of state-level standards for children's learning prior to kindergarten. *Early Childhood Research and Practice, 5*(2), 1–27.

Scott-Little, C., Kagan, S. L., & Frelow, V. S. (2006). Conceptualization of readiness and the content of early learning standards: The intersection of policy and research? *Early Childhood Research Quarterly, 21*, 153–173.

Scott-Little, C., Lesko, J., Martella, J., & Milburn, P. (2007). Early learning standards: Results from a national survey to document trends in state-level policies and practices. *Early Childhood Research and Practice, 9*(1), 1–23.

Scott-Little, C., & Reid, J. (2010). Aligning the content of early childhood care and education. In S. L. Kagan & K. Tarrant (Eds.), *Transitions for young children: Creating connections across early childhood systems* (pp. 109–133). Baltimore, MD: Paul H. Brookes.

Shen, J., & Ma, X. (2013). *Quality rating and improvement system for early care and education: Development, implementation, evaluation and learning*. New York, NY: Peter Lang.

Slaby, R., Loucks, S., & Stelwagon, P. (2005). Why is preschool essential in closing the achievement gap? *Educational Leadership and Administration, 17*, 47–57.

Slade, S., & Griffith, D. (2013). A whole child approach to student success. *KEDI Journal of Educational Policy*, *10*(3), 21–35.

Stipek, D. (2006). No child left behind comes to preschool. *The Elementary School Journal, 106,* 455–466.

Strickland, D. S. (2013). Linking early literacy research and the Common Core State Standards. In L. B. Gambrell & S. B. Neuman (Eds.), *Quality reading instruction in the age of Common Core Standards* (pp. 13–25). Newark, DE: International Reading Association.

Takanishi, R., & Kauerz, K. (2008). PK inclusion: Getting serious about a P–16 education system. *Phi Delta Kappan, 89*, 480–487.

Teaching Strategies. (2015). *Gold.* Retrieved from http://shop.teachingstrategies.com/page/GOLD-assessment-online.cfm#alignmentsTeac

Tout, K., Halle, T., Daily, S., Albertson-Junkans, L., & Moodie, S. (2013). *The research base for a birth through age eight state policy framework*. Retrieved from http://www.childtrends.org/wp-content/uploads/2013/10/2013-42AllianceBirthto81.pdf

Traylor, F. (2012). Bringing early childhood into the education system: Pre-K-3rd. In S. L. Kagan & K. Kauerz (Eds.), *Early childhood systems: Transforming early learning* (pp. 47–52). New York, NY: Teachers College Press.

U.S. Department of Education. (2011). *Race to the top: Early learning challenge executive summary.* Retrieved from http://www.ed.gov/sites/default/files/rtt-elc-draft-execsumm-070111.pdf

U.S. Department of Education. (2015). *A matter of equity: Preschool in America*. Retrieved from http://www2.ed.gov/documents/early-learning/matter-equity-preschool-america.pdf

White House. (2002). *Good start, grow smart: The Bush administration's Early Childhood Initiative.* Retrieved from http://georgewbush-whitehouse.archives.gov/infocus/earlychildhood/earlychildhood.html

Williams, C. (2015, June 11). *Dual language learners and the scourge of limited data*. Retrieved from http://www.edcentral.org/datadlls/

Wong, V. C., Cook, T. D., Barnett, W. S., & Jung, K. (2008). An effectiveness-based evaluation of five state pre-kindergarten programs. *Journal of Policy Analysis and Management, 27*, 122–154.

Appendix A

Table A List of Prekindergarten Age 4 Learning Standards Documents Used in Analyses

State/territory	Document name	Year	Web link
Alabama	Alabama Developmental Standards for Preschool Children	2012	http://children.alabama.gov/uploadedFiles/File/DevelopmentalStandardshandbook.pdf
Alaska	State of Alaska Early Learning Guidelines	2007	http://www.eed.state.ak.us/publications/earlylearningguidelines.pdf
Arizona	Arizona Early Learning Standards, 3rd Edition	2013	http://www.azed.gov/early-childhood/files/2011/11/arizona-early-learning-standards-3rd-edition.pdf
Arkansas	Arkansas Early Childhood Education Framework Handbook for Three and Four-Year-Old Children	2013	http://humanservices.arkansas.gov/dccece/dccece_documents/aeceframwork.pdf
California	California Preschool Learning Foundations	2008	http://www.cde.ca.gov/sp/cd/re/documents/preschoollf.pdf
Colorado	Colorado Early Learning and Development Guidelines	2012	http://www.cde.state.co.us/early/eldgs
Connecticut	Connecticut Early Learning and Developmental Standards: What Children, Birth to Five, Should Know and Be Able to Do	2014	http://www.sde.ct.gov/sde/lib/sde/pdf/backtoschool/ctelds_whatchildren_birthtofive_should_know_and_be_able_to_do.pdf
Delaware	Delaware Early Learning Foundations: Preschool	2010	http://www.doe.k12.de.us/Page/587
District of Columbia	District of Columbia Common Core Early Learning Standards	2012	http://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/DC%20Early%20Learning%20Standards2013.pdf
Florida	Florida Early Learning and Developmental Standards	2011	http://flbt5.floridaearlylearning.com/
Georgia	Georgia Early Learning and Development Standards: 48–60 Months	2013	http://www.gelds.decal.ga.gov/Documents/48-60_Indicators.pdf
Guam	Guam Early Learning Guidelines for Young Children Ages Three to Five	2005	http://guamkids.org/pdf/Downloadable%20Docs/Guam-Early%20Learning%20Guidelines-3-5yrs.pdf
Hawaii	Hawaii Early Learning and Development Standards	2014	http://earlylearning.hawaii.gov/wp-content/uploads/2014/02/HELDS-continuum-2014.04.01.pdf
Idaho	Idaho Early Learning EGuidelines	2013	http://healthandwelfare.idaho.gov/Portals/0/Children/InfantToddlerProgram/ELeG/ELeGD5Complete.pdf
Illinois	Illinois Early Learning and Development Standards	2013	http://www.isbe.state.il.us/earlychi/pdf/early_learning_standards.pdf
Indiana	Foundations to the Indiana Academic Standards for Young Children from Birth to Age 5	2012	http://www.doe.in.gov/sites/default/files/curriculum/indianafoundations-february-2012.pdf
Iowa	Iowa Early Learning Standards	2012	http://www.state.ia.us/earlychildhood/files/early_learning_standarda/IELS_2013.pdf
Kansas	Kansas Early Learning Standards: Building the Foundation for Successful Children	2014	http://www.ksde.org/Portals/0/Early%20Childhood/Early%20Learning%20Standards/KsEarlyLearningStandards.pdf
Kentucky	Kentucky Early Childhood Standards	2013	http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CB4QFjAA&url=http%3A%2F%2Fkidsnow.ky.gov%2FImproving-Early-Care%2FDocuments%2FKentucky%2520Early%2520Childhood%2520Standards.pdf&ei=8SB-VOfEM4mqNofugOAJ&usg=AFQjCNF4WlCKrwYSVFTH2WvHk9Vyn_PTjQ
Louisiana	Louisiana's Birth to Five Early Learning and Development Standards (ELDS)	2013	http://www.louisianabelieves.com/docs/academic-standards/early-childhood---birth-to-five-standards.pdf?sfvrsn=7
Maine	State of Maine Early Childhood Learning Guidelines	2005	http://www.maine.gov/earlylearning/standards/early-childhood-learning-guidelines.pdf
Maryland	Maryland Model for School Readiness (MMSR): Framework and Standards for Prekindergarten	2009	http://www.mdk12.org/instruction/ensure/mmsr/MMSRpkFrameworkAndStandards.pdf

Table A Continued

State/territory	Document name	Year	Web link
Massachusetts	Massachusetts Curriculum Framework for English Language Arts and Literacy	2011	http://www.doe.mass.edu/frameworks/ela/0311.pdf
Michigan	Early Childhood Standards of Quality for Prekindergarten	2013	http://www.michigan.gov/documents/mde/ECSQ_OK_Approved_422339_7.pdf
Minnesota	Early Childhood Indicators of Progress: Minnesota's Early Learning Standards	2005	http://education.state.mn.us/MDE/StuSuc/EarlyLearn/
Mississippi	Early Learning Standards for Classrooms Serving Four-Year-Old Children	2013	http://www.earlychildhood.msstate.edu/resources/curriculumforfour/pdfs/els_4.pdf
Missouri	Missouri Early Learning Standards	2009	http://dese.mo.gov/sites/default/files/eel-el-literacy-teacher.pdf
Montana	Montana Early Learning Standards	2014	http://mtecp.org/pdfs/Montana%20Early%20Learning%20Standards.pdf
Nebraska	Nebraska Early Learning Guidelines for Ages 3 to 5	2013	http://www.education.ne.gov/oec/pubs/ELG/3_5_English.pdf
Nevada	Nevada Pre-Kindergarten Standards	2010	http://www.nevadaregistry.org/fb_files/PreKStandards-FINAL.pdf
New Hampshire[a]	New Hampshire Early Learning Standards: Birth-Five Years (Draft)	2014	http://nh.childcareaware.org/wp-content/uploads/2015/10/nh-early-learning-standards.pdf
New Jersey	Preschool Teaching and Learning Standards	2014	http://www.nj.gov/education/ece/guide/standards.pdf
New Mexico	New Mexico Early Learning Guidelines: Birth Through Kindergarten	2014	http://www.earlylearningnm.org/media/files/FINAL%20ELG_English2015%201-8-15.pdf
New York	New York State Prekindergarten Foundation for the Common Core	2011	http://www.p12.nysed.gov/ciai/common_core_standards/pdfdocs/nyslsprek.pdf
North Carolina	North Carolina Foundations for Early Learning and Development	2013	http://ncchildcare.nc.gov/pdf_forms/NC_foundations.pdf
North Dakota	North Dakota Pre-Kindergarten Content Standards	2013	http://www.dpi.state.nd.us/EarlyChildhoodEduc/pkstandards.pdf
Ohio	Ohio Early Learning and Development Standards	2012	http://education.ohio.gov/Topics/Early-Learning/Early-Learning-Content-Standards/Birth-Through-Pre_K-Learning-and-Development-Stand
Oklahoma	Oklahoma Early Learning Guidelines for Children: Ages Three Through Five	2010	http://digitalprairie.ok.gov/cdm/ref/collection/stgovpub/id/19703
Oregon	The Head Start Child Development and Early Learning Framework: Promoting Positive Outcomes in Early Childhood Programs Serving Children 3–5 Years Old	2010	https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/Assessment/Child%20Outcomes/HS_Revised_Child_Outcomes_Framework%28rev-Sept2011%29.pdf
Pennsylvania	Pennsylvania Learning Standards for Early Childhood Pre-Kindergarten	2014	https://www.pakeys.org/uploadedContent/Docs/Career%20Development/2014%20Pennsylvania%20Learning%20Standards%20for%20Early%20Childhood%20PreKindergarten.pdf
Puerto Rico	Puerto Rico Prekindergarten Standards and Expectations Document	2010	Personal communication
Rhode Island	Rhode Island Early Learning and Development Standards	2013	http://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Early-Childhood/ELDS/2013_Early_Learning_and_Development_Standards.pdf
South Carolina	South Carolina Early Learning Standards for 3, 4, and 5 Year-Old Children	2009	http://ed.sc.gov/scdoe/assets/file/programs-services/64/documents/EarlyLearningGoodStart.pdf
South Dakota	South Dakota Early Learning Guidelines	2006	http://doe.sd.gov/oess/documents/HEADSTART_EarlyLearningGuidelines.pdf
Tennessee	Revised Tennessee Early Learning Developmental Standards for Four-Year-Olds	2012	https://www.tn.gov/assets/entities/education/attachments/std_tnelds_4yo.pdf
Texas	Revised Texas Prekindergarten Guidelines	2008	http://tea.texas.gov/index2.aspx?id=2147495508
Utah	Utah's Early Childhood Core Standards with Teaching Strategies and Activities	2013	http://www.schools.utah.gov/CURR/preschoolkindergarten/Core/StrategiesActivities.aspx

Table A Continued

State/territory	Document name	Year	Web link
Vermont[b]	Vermont Early Learning Standards: Guiding the Development and Learning of Children Entering Kindergarten	2003	http://education.vermont.gov/documents/edu-early-education-vels.pdf
Virgin Islands	United States Virgin Islands Early Learning Guidelines	2010	http://www.cfvi.net/documents/ELG%20Complete.pdf
Virginia	Virginia's Foundation Blocks for Early Learning: Comprehensive Standards for Four-Year-Olds	2013	http://www.doe.virginia.gov/instruction/early_childhood/preschool_initiative/foundationblocks.pdf
Washington	Washington State Early Learning and Development Guidelines: Birth through 3rd Grade	2012	http://www.del.wa.gov/publications/development/docs/guidelines.pdf
West Virginia	Early Learning Standards Framework for West Virginia Pre-K	2013	http://static.k12.wv.us/oel/docs/earlylearning_standardsframework_brochureWEB.pdf
Wisconsin	Wisconsin Model Early Learning Standards: Fourth Edition, Birth to First Grade	2013	http://www.collaboratingpartners.com/documents/WMELS4thEdition_web_edit2.pdf
Wyoming	Wyoming Early Learning Foundations for Children Ages 3–5	2013	http://edu.wyoming.gov/wordpress/downloads/early-childhood/2014/14-align-0009-early-learning-foundations-spreads-1.pdf

[a]No link is available for the draft version of the New Hampshire pre-K age 4 learning standards document used in the study; the table includes the link to the final revised document for New Hampshire, which was not available for analyses. [b]The link for the prior version of the Vermont pre-K age 4 learning standards used in our analyses is no longer available; the table includes the link to the revised 2015 document for Vermont.

Appendix B

Table B State-by-State Analysis of Enriching Content for Prekindergarten Age 4 Learning Standards

U.S. state/territory	Have teaching strategies?	Teaching strategies location	Have child examples?	Child examples location
Alabama	YES	Standards document	YES	Standards document
Alaska	YES	Standards document	YES	Standards document
Arizona	YES	Standards document	YES	Standards document
Arkansas	YES	Standards document	YES	Standards document
California	YES	Implementation guide	YES	Standards document
Colorado	YES	Standards document	YES	Standards document
Connecticut	YES	Standards document	NO	N/A
Delaware	YES	Standards document	YES	Standards document
District of Columbia	YES	Standards document	YES	Standards document
Florida	YES	Standards document	YES	Standards document
Georgia	NO	N/A	YES	Resource guide
Guam	NO	N/A	YES	Standards document
Hawaii	NO	N/A	NO	N/A
Idaho	YES	Standards document	NO	N/A
Illinois	NO	N/A	YES	Standards document
Indiana	YES	Standards document	YES	Standards document
Iowa	YES	Standards document	YES	Standards document
Kansas	NO	N/A	NO	N/A
Kentucky	YES	Professional development guide	YES	Standards document
Louisiana	YES	Standards document	NO	N/A
Maine	NO	N/A	YES	Standards document
Maryland	NO	N/A	NO	N/A
Massachusetts	NO	N/A	NO	N/A
Michigan	YES	Standards document	YES	Standards document
Minnesota	YES	Standards document	NO	N/A
Mississippi	YES	Curriculum guidelines	NO	N/A
Missouri	YES	Standards document	YES	Standards document
Montana	YES	Standards document	YES	Standards document
Nebraska	YES	Standards document	YES	Standards document
Nevada	YES	Standards document	YES	Standards document
New Hampshire	NO	N/A	YES	Standards document

Table B Continued

U.S. state/territory	Have teaching strategies?	Teaching strategies location	Have child examples?	Child examples location
New Jersey	YES	Standards document	NO	N/A
New Mexico	NO	N/A	YES	Standards document
New York	NO	N/A	NO	N/A
North Carolina	YES	Standards document	NO	N/A
North Dakota	NO	N/A	YES	Standards document
Ohio	YES	Implementation guide	NO	N/A
Oklahoma	YES	Standards document	YES	STANDARDS document
Oregon	NO	n/a	NO	N/A
Pennsylvania	YES	Standards document	YES	Standards document
Puerto Rico	NO	N/A	NO	N/A
Rhode Island	NO	N/A	NO	N/A
South Carolina	YES	Standards document	YES	Standards document
South Dakota	YES	Standards document	NO	N/A
Tennessee	NO	N/A	NO	N/A
Texas	YES	Standards document	YES	Standards document
Utah	YES	Standards document	NO	N/A
Vermont	YES	Standards document	NO	N/A
Virgin Islands	YES	Standards document	NO	N/A
Virginia	YES	Standards document	NO	N/A
Washington	YES	Standards document	NO	N/A
West Virginia	NO	N/A	NO	N/A
Wisconsin	YES	Standards document	YES	Standards document
Wyoming	YES	Standards document	NO	N/A

Appendix C Professional and Educational Characteristics of Sample

Table C1 provides the professional and educational backgrounds of the online survey sample. Table C2 provides professional and educational characteristics of focus group sample. Table C3 provides the professional and educational characteristics of the interview sample.

Table C1 Professional and Educational Background of Online Survey Sample

U.S. state/territory	Educational level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Alaska	Bachelor's degree	Y	>31	Early Childhood Education Specialist II	Department of Education and Early Development
Arizona	Bachelor's degree	N	21–25	Director	Department of Education
Arkansas	Bachelor's degree	N	21–25	Director, Division of Child Care and Early Childhood Education	Department of Human Services
California	Master's degree	Y	>31	Education Administrator	Department of Education
Colorado	Master's degree	Y	>31	Program Director, Colorado Preschool Program and Results Matter Program	Education
Connecticut	Master's degree	Y	21–25	Early Childhood Specialist	Office of Early Childhood
Delaware	Master's degree	Y	21–25	Education Associate	Department of Education
District of Columbia	Master's degree	Y	21–25	PD Supervisor	Office of the State Superintendent of Education Division of Early Learning
Florida	Advanced professional degree	N	21–25	Bureau Chief, Voluntary Prekindergarten	Department of Education Office of Early Learning
Georgia	Advanced professional degree	Y	11–15	Standards Coordinator	Department of Early Care and Learning

Table C1 Continued

U.S. state/ territory	Educational level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Guam	Master's degree	N	16–20	Coordinator, Health Wellness Initiative Area	University Center on Developmental Disabilities Education, Research and Services
Hawaii	Advanced professional degree	Y	21–25	Director	Governor's Office
Idaho	Master's degree	N	>31	Head Start Collaboration Director	Department of Health and Welfare, Infant Toddler Program (Part-C)
Illinois	Advanced professional degree	Y	>31	Professor of Early Childhood and Reading	State Board of Education, Division of Early Childhood
Indiana	Master's degree	Y	21–25	Early Learning Specialist	Department of Education
Iowa	Advanced professional degree	Y	16–20	Team Lead Consultant	Department of Education, Bureau of Standards and Curriculum
Kansas	Advanced professional degree	Y	>31	Early Childhood Coordinator	State Department of Education
Kentucky	Master's degree	N	11–15	School Readiness Branch Manager	Department of Education, Office of Next Generation Learners, Division of Program Standards, School Readiness Branch
Louisiana	Master's degree	Y	21–25	Part B 619 Preschool Coordinator and Education Program Consultant for Early Childhood	Department of Education
Maine	Master's degree	N	>31	Early Childhood Consultant	Education
Maryland	Master's degree	Y	>31	Early Learning Branch Chief	State Department of Education
Massachusetts	Master's degree	N	21–25	Director of Literacy and Humanities	Department of Elementary and Secondary Education
Michigan	Advanced professional degree	Y	>31	Director, Early Childhood Education and Family Services	Department of Education, Office of Great Start
Minnesota	Master's degree	N	>31	Early Childhood Specialist	Department of Education
Mississippi	Master's degree	Y	16–20	Director of early Childhood, Literacy and Dyslexia	Department of Education, Office of Curriculum and Instruction
Missouri	Bachelor's degree	Y	>31	Director, Early Learning Curriculum	Department of Elementary and Secondary Education
Montana	Master's degree	Y	16–20	Instructional Specialist	Office of Public Instruction
Nebraska	Master's degree	Y	21–25	Senior Administrator	State Education Agency
Nevada	Master's degree	N	>31	Director of Child and Family Services	Child and Family Services Department
New Hampshire	Advanced professional degree	Y	21–25	Administrator/State Director of Title I	Department of Education, Bureau of Integrated Programs, Division of Educational Improvement
New Jersey	Master's degree	Y	21–25	Education Development Specialist	Division of Early Childhood
New Mexico	Master's degree	Y	>31	PreK Program Specialist and Data Coordinator	Public Education Department
New York	Master's degree	Y	16–20	Coordinator, Office of Early Learning	State Education Department
North Carolina	Advanced professional degree	Y	>31	RTT-ELC Program Administrator	Department of Public Instruction
North Dakota	Master's degree	Y	7–10	Early Childhood Administrator	Department of Public Instruction
Northern Mariana Islands	Master's degree	Y	<1	Associate Commissioner for Instruction	Office of Instructional Service
Ohio				Director	Department of Education

Table C1 Continued

U.S. state/ territory	Educational level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Oklahoma	Bachelor's degree	Y	7–10	Director of Early Childhood and Physical Education	State Department of Education, Office of Instruction
Oregon	Master's degree	Y	>31	Director	Department of Education
Pennsylvania	Master's degree	Y	16–20	Education Executive	Department of Education, Department of Public Welfare
Puerto Rico	Master's degree	Y	21–25	Early Education Director Program	Department of Education Central Level
Rhode Island	Master's degree	Y	16–20	Associate Director, Early Childhood Education	Department of Elementary and Secondary Education
South Carolina	Master's degree	Y	>31	Education Associate, Literacy and Early Learning	Department of Education, Office of Instructional Practices and Evaluations
South Dakota	Bachelor's degree	N	21–25	Head Start State Collaboration Office Director	Department of Education
Tennessee	Master's degree	Y	21–25	Director of Early Childhood Programs	Department of Education, Division of Curriculum and Instruction, Office of Early Learning
Texas	Bachelor's degree	N	4–6	Program Specialist	Education Agency
Utah	Master's degree	Y	4–6	Early Childhood Specialist and Literacy Tutoring Specialist	Teaching and Learning, State Office of Education
Virgin Islands	Master's degree	Y	>31	Coordinator of the Early Childhood Advisory Committee	Community Foundation
Virginia	Master's degree	Y	>31	Associate Director of Early Childhood Education	Department of Education, Office of Humanities and Early Childhood Education
Washington	Advanced professional degree	Y	21–25	Director	State Department of Early Learning
West Virginia	Master's degree	Y	16–20	Executive Director, Office of Early Learning	Department of Education
Wisconsin	Advanced professional degree	Y	>31	Early Childhood Consultant	Department of Public Instruction
Wyoming	Master's degree	Y	4–6	Early Learning Consultant	Department of Education

Note. Advanced professional degree includes EdD, PhD, MD, or JD.

Table C2 Professional and Educational Characteristics of Focus Group Sample

U.S. state/territory	Educational level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
California	Master's degree	N	>31	Child Development Consultant	Department of Education, Early Education and Support Division
Colorado	Master's degree	Y	16–20	Preschool Program Regional Support Specialist	Department of Education
Connecticut	Master's degree	Y	21–25	Early Childhood Specialist	Office of Early Childhood
Delaware	Advanced professional degree	Y	11–15	Director, Early Development and Learning	Department of Education
Florida	Advanced professional degree	N	21–25	Bureau Chief, Voluntary Prekindergarten	Department of Education, Office of Early Learning
Georgia	Advanced professional degree	Y	11–15	Standards Coordinator	Department of Early Care and Learning

Table C2 Continued

U.S. state/territory	Educational level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Illinois	Advanced professional degree	Y	>31	Professor of Early Childhood and Reading	State Board of Education, Division of Early Childhood
Maryland	Master's degree	Y	>31	Early Learning Branch Chief	State Department of Education
Massachusetts	Master's degree	N	26–30	Early Literacy Specialist	Department of Elementary and Secondary Education, Office of Literacy and Humanities
Michigan	Advanced professional degree	Y	>31	Director, Early Childhood Education and Family Services	Department of Education, Office of Great Start
Minnesota	Master's degree	N	>31	Early Childhood Specialist	Department of Education
Mississippi	Master's degree	Y	16–20	Director of Early Childhood, Literacy and Dyslexia	Department of Education, Office of Curriculum and Instruction
Missouri	Bachelor's degree	Y	>31	Director, Early Learning Curriculum	Department of Elementary and Secondary Education
Montana	Master's degree	Y	16–20	Instructional Specialist	Office of Public Instruction
Nevada	Master's degree	N	>31	Director of Child and Family Services	Child and Family Services Department
Pennsylvania	Master's degree	Y	21–25	Early Education Advisor II	Department of Education, Office of Child Development and Early Learning (OCDEL)
Puerto Rico	Master's degree	Y	21–25	Early Education Director Program	Department of Education Central Level
Rhode Island	Master's degree	Y	16–20	Associate Director, Early Childhood Education	Department of Elementary and Secondary Education
Tennessee	Master's degree	Y	21–25	Director of Early Childhood Programs	Department of Education, Division of Curriculum and Instruction, Office of Early Learning
Virginia	Master's degree	Y	>31	619 Coordinator	Department of Education
West Virginia	Master's degree	Y	11–15	Lead Coordinator	Department of Education, Office of Early Learning

Note. Advanced professional degree includes EdD, PhD, MD, or JD.

Table C3 Professional and Educational Characteristics of Interview Sample

U.S. state/territory	Education level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Alaska	Bachelor's degree	Y	>31	Early Childhood Education Specialist II	Department of Education and Early Development
California	Master's degree	N	>31	Child Development Consultant	Department of Education, Early Education and Support Division
Delaware	Advanced professional degree	Y	11–15	Director, Early Development and Learning	Department of Education
Florida	Advanced professional degree	N	21–25	Bureau Chief, Voluntary Prekindergarten	Department of Education Office of Early Learning
Georgia	Advanced professional degree	Y	11–15	Standards Coordinator	Department of Early Care and Learning
Hawaii	Advanced professional degree	Y	21–25	Director	Governor's Office
Illinois	Advanced professional degree	Y	>31	Professor of Early Childhood and Reading	State Board of Education, Division of Early Childhood
Kansas	Advanced professional degree	Y	>31	Early Childhood Coordinator	State Department of Education

Table C3 Continued

U.S. state/ territory	Education level	Licensed teacher?	No. years in early childhood	Professional title	Department/agency
Kentucky	Master's degree	N	11–15	School Readiness Branch Manager	Department of Education, Office of Next Generation Learners, Division of Program Standards, School Readiness Branch
Louisiana	Master's degree	Y	21–25	Part B 619 Preschool Coordinator and Education Program Consultant for Early Childhood	Department of Education
Maryland	Master's degree	Y	>31	Early Learning Branch Chief	State Department of Education
Michigan	Advanced professional degree	Y	>31	Director, Early Childhood Education and Family Services	Department of Education, Office of Great Start
Mississippi	Master's degree	Y	16–20	Director of Early Childhood, Literacy and Dyslexia	Department of Education, Office of Curriculum and Instruction
Missouri	Bachelor's degree	Y	>31	Director, Early Learning Curriculum	Department of Elementary and Secondary Education
Montana	Master's degree	Y	16–20	Instructional Specialist	Office of Public Instruction
New Hampshire	Advanced professional degree	Y	21–25	Administrator/State Director of Title I	Department of Education, Bureau of Integrated Programs, Division of Educational Improvement
New Jersey	Master's degree	Y	21–25	Education Development Specialist	Division of Early Childhood
Oklahoma	Bachelor's degree	Y	7–10	Director of Early Childhood and Physical Education	State Department of Education, Office of Instruction
Pennsylvania	Master's degree	Y	21–25	Early Education Advisor II	Department of Education, Office of Child Development and Early Learning (OCDEL)
Puerto Rico	Master's degree	Y	21–25	Early Education Director Program	Department of Education Central Level
Rhode Island	Master's degree	Y	16–20	Associate Director, Early Childhood Education	Department of Elementary and Secondary Education
Tennessee	Master's degree	Y	21–25	Director of Early Childhood Programs	Department of Education, Division of Curriculum and Instruction, Office of Early Learning
Virgin Islands	Master's degree	Y	>31	Coordinator of the Early Childhood Advisory Committee	Community Foundation
Washington	Advanced professional degree	Y	21–25	Director	State Department of Early Learning
West Virginia	Master's degree	Y	16–20	Executive Director, Office of Early Learning	Department of Education

Note. Advanced professional degree includes EdD, PhD, MD, or JD.

Appendix D

Defining Kindergarten Language and Literacy Readiness—An Exploration of State and Territory Prekindergarten Age 4 Early Literacy Learning Standards

Please note that throughout the survey, PK4L Standards is used to abbreviate Pre-K Age 4 Literacy Standards.

Purpose/Development/Revision of the Pre-K Age 4 Literacy Standards

In this section, we want to learn about the purpose and history of Pre-K Age 4 Literacy (PK4L) Standards. This includes details about the process of developing and revising the PK4L Standards. **Please note that all survey items refer to your respective state, territory, or the District of Columbia.**

1. What is the purpose of having PK4L Standards?
2. In what year were the PK4L Standards originally developed?
3. PK4L Standards are typically developed by a group of individuals working in the field of early childhood education. Please indicate whether the following types of contributors were involved in developing the **original** PK4L Standards.

    a. University Professors/Higher Education Professionals
    b. Policy Makers
    c. Early Childhood Educators
    d. Early Childhood Administrators
    e. State Department of Education Personnel
    f. Non-Academic Expert Consultants
    g. Parents
    h. Other (Please Specify):_____

4. How were people identified to assist in developing the **original** PK4L Standards? Please list the criteria used.
5. Describe the process used to develop the **original** PK4L Standards. Elaborate, if possible, about the time it took, number of people involved, review cycle, and final approval, etc.
6. Have the PK4L Standards ever been revised?

    a. Yes
    b. No {Skip to #12}

7. How many completed revisions have occurred after the **original** PK4L Standards were developed?

    a. 1
    b. 2
    c. 3
    d. 4
    e. 5
    f. More than 5

8. Please indicate the year(s) that revisions were completed for the PK4L Standards.

    a. Revision #1: _____ {YYYY}
    b. Revision #2: _____ {YYYY}
    c. Revision #3: _____ {YYYY}
    d. Revision #4: _____ {YYYY}
    e. Revision #5: _____ {YYYY}
    f. Revision #6: _____ {YYYY}
    g. Revision #7: _____ {YYYY}
    h. Revision #8: _____ {YYYY}
    i. Revision #9: _____ {YYYY}
    j. Revision #10: _____ {YYYY}

9. Please indicate whether or not the following types of contributors were involved in the **most recent completed revision** of the PK4L Standards.

    a. University Professors/Higher Education Professionals
    b. Policy Makers
    c. Early Childhood Educators
    d. Early Childhood Administrators
    e. State Department of Education Personnel
    f. Non-Academic Expert Consultants
    g. Parents
    h. Other (Please Specify):_____

10. How were people identified to assist in developing the **most recent completed revision** of the PK4L Standards? Please list the criteria used.
11. Describe the process used in the **most recent completed revision** of the PK4L Standards. Elaborate, if possible, about the time it took, number of people involved, review cycle, and final approval, etc.
12. Are the PK4L Standards **currently** under revision?
    a. Yes
    b. No {Skip to #14}
13. Please explain why the **latest** PK4L Standards are being revised.

Pre-K Age 4 Language/Literacy Domain Content

The Language/Literacy domain can be organized in many ways. Typically, this domain is divided into several subdomains or categories, such as vocabulary. These subdomains or categories are typically further divided into **performance indicators** (e.g., understand and use accepted words for categories of objects encountered and used frequently in everyday life) and **instructional strategies** (e.g., encourage children to understand how familiar items/objects fit into different categories). In this section, we want to learn about the **most recent** revised version of the Language/Literacy domain content in **your respective state, territory, or the District of Columbia.**

14. How many subdomains are there in the PK4L Standards?
15. Please list all of the PK4L Standards categories in the spaces provided below.
    a. Subdomain #1:
    b. Subdomain #2:
    c. Subdomain #3:
    d. Subdomain #4:
    e. Subdomain #5:
    f. Subdomain #6:
    g. Subdomain #7:
    h. Subdomain #8:
    i. Subdomain #9:
    j. Subdomain #10:
    k. Subdomain #11:
    l. Subdomain #12:
    m. Subdomain #13:
    n. Subdomain #14:
    o. Subdomain #15:
    p. Subdomain #16:
    q. Subdomain #17:
    r. Subdomain #18:
    s. Subdomain #19:
    t. Subdomain #20:
    u. Subdomain #21:
    v. Subdomain #22:
    w. Subdomain #23:
    x. Subdomain #24:
    y. Subdomain #25:
16. Are the PK4L Standards subdomains divided into performance indicators?
    a. Yes
    b. No

17. Are instructional strategies that are linked to performance indicators provided to assist teachers in helping children meet the PK4L Standards?

    a. Yes
    b. No

18. Are clear examples provided that describe what it looks like for children to meet the PK4L Standards?

    a. Yes
    b. No

19. What types of resources provided the foundation for the PK4L Standards content?
20. Which types of Pre-K Age 4 programs are required to use the PK4L Standards? Please mark all that apply.

    a. Public School Pre-K programs
    b. Non-Public School State-Run Pre-K programs
    c. Center-Based Pre-K programs
    d. Family-Based Pre-K programs
    e. Parochial Pre-K programs
    f. Other (Please Specify):_____

Meeting the Pre-K Age 4 Literacy Standards and Kindergarten Literacy Readiness

In this section, we want to better understand how children meet Pre-K Age 4 Literacy Standards. In addition, we are interested in learning about what determines Kindergarten Literacy Readiness. **Please note that all survey items refer to your respective state, territory, or the District of Columbia.**

21. Think about the specific assessments used to determine if children have met the Pre-K Age 4 Literacy Standards. Describe which tools are used, how they were selected, and what exactly they assess.
22. For each assessment listed in the previous question, please indicate **when and how often** these assessments are administered during the Pre-K Age 4 year.
23. What criteria determine if children have or have not met the PK4L Standards at the completion of Pre-K?
24. What procedures are in place for children who do not meet the PK4L Standards? Mark all that apply.

    a. Supplemental Instruction/Tutoring
    b. Developmental Kindergarten (i.e., extra year of Kindergarten Readiness preparation)
    c. Summer Programs
    d. Repeat Pre-Kindergarten (Age 4)
    e. Other: Please Specify _____

25. Please provide the formal definition of Kindergarten Literacy Readiness.
26. What criteria are used to determine Kindergarten Literacy Readiness?
27. Indicate your level of agreement with the following statement: A child who meets the goals stated in the PK4L Standards is ready to move on to Kindergarten.

    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

28. Does your state/territory/DC have a Kindergarten Entry Assessment?

    a. Yes
    b. No

29. Please describe the Kindergarten Entry Assessment(s).

Links to Kindergarten Common Core English Language Arts State Standards

In this section, we want to better understand the process of linking the Pre-K Age 4 Literacy (PK4L) Standards to the Kindergarten Common Core English Language Arts State Standards. **Please note that all survey items refer to your respective state, territory, or the District of Columbia.**

30. Have the Common Core State Standards been adopted?
    a. Yes
    b. No
31. Have the PK4L Standards been linked to the Kindergarten Common Core English Language Arts State Standards?
    a. Yes
    b. No
32. Please describe the process used to link the PK4L Standards to the Kindergarten Common Core English Language Arts State Standards.
33. Describe the level of difficulty when linking the PK4L Standards to the Kindergarten Common Core English Language Arts State Standards?
    a. Very Difficult
    b. Difficult
    c. Neither Difficult nor Easy
    d. Easy
    e. Very Easy
34. Please elaborate about why the specific level of difficulty was chosen in the previous question.
35. Did the PK4L Standards have to be revised to link them to the Kindergarten Common Core English Language Arts State Standards?
    a. Yes
    b. No
36. What were the major reasons for having to revise the PK4L Standards? Please describe in as much detail as possible.
37. Did the decision to link the PK4L Standards to the Kindergarten Common Core State Standards affect the current definition of Kindergarten Literacy Readiness?
    a. Yes
    b. No
38. Please elaborate about how the definition of Kindergarten Literacy Readiness changed.
39. How are the PK4L Standards linked to expectations for Kindergarten entry?

Background of Respondent

In this section, we are interested in learning more about your background.

40. What is your gender?
    a. Male
    b. Female
41. What is your race?
    a. Black or African American
    b. American Indian or Alaskan Native
    c. Asian or Asian American
    d. Native Hawaiian or Pacific Islander
    e. White or Caucasian

f. Two or More Races
g. Other: Please specify _____

42. What is your ethnicity?

a. Hispanic or Latino
b. Not Hispanic or Latino

43. Please indicate your highest level of educational attainment.

a. Associate's degree
b. Bachelor's degree
c. Master's degree
d. Advanced professional degree (Ed.D., Ph.D., M.D., or J.D.)

44. Please specify the field(s) in which you earned your highest degree.
45. Are you a licensed teacher?

a. Yes
b. No

46. Please indicate how many years you have worked in the field of early childhood.

a. Less than 1 year
b. 1 – 3 years
c. 4 – 6 years
d. 7 – 10 years
e. 11 – 15 years
f. 16 – 20 years
g. 21 – 25 years
h. 26 – 30 years
i. 31+ years

47. Which state or territory do you represent?
48. In which department/agency do you work?
49. What is your professional title?
50. How long have you been in your current position?

a. Less than 1 year
b. 1 – 3 years
c. 4 – 6 years
d. 7 – 10 years
e. 11 – 15 years
f. 16 – 20 years
g. 21 – 25 years
h. 26 – 30 years
i. 31+ years

51. Briefly discuss your expertise in the area of Early Literacy.
52. Please describe your role in the development and/or revision of the PK4L Standards.
53. Please describe your role in the implementation and monitoring of the PK4L Standards.
54. In the future, we may replicate this survey with a focus on early math. We would appreciate your help in identifying the appropriate person in your state/territory/DC who could serve as the representative for the Pre-K Age 4 Early Math Learning Standards. **It is very important to notify this individual and request permission to share his/her contact information before entering it into the survey.** If you have permission to share this information, please

provide this person's name, e-mail address, field of expertise, and phone number in the spaces below so that we can contact them when ready.

a. First Name
b. Last Name
c. E-mail Address
d. Field of Expertise
e. Phone Number

Appendix E

Table E State-by-State Data From the Online Study Survey About Prekindergarten Learning Standards Development

U.S. state/territory	Original year standards developed	Standards ever revised?	No. revisions	Currently under revision?
Alabama	2006	NO	N/A	NO
Alaska	2006	NO	N/A	NO
Arizona	2003	YES	2	NO
Arkansas	1996	YES	2	NO
California	2008	NO	N/A	NO
Colorado	1999	YES	2	NO
Connecticut	2013	YES	1	NO
Delaware	2003	YES	1	NO
District of Columbia	2006	YES	2	NO
Florida	2005	YES	2	NO
Georgia	2002	YES	2	NO
Guam	2005	NO	N/A	YES
Hawaii	2008	YES	2	NO
Idaho	2009	YES	1	NO
Illinois	2002	YES	1	NO
Indiana	2006	YES	1	NO
Iowa	2006	YES	1	NO
Kansas	2006	YES	2	NO
Kentucky	2003	YES	2	NO
Louisiana	2003	YES	2	NO
Maine	2004	NO	N/A	YES
Maryland	2007	YES	1	NO
Massachusetts	2003	YES	1	NO
Michigan	2005	YES	1	YES
Minnesota	2000	YES	1	YES
Mississippi	2012	YES	1	NO
Missouri	2001	YES	1	YES
Montana	2003	YES	1	NO
Nebraska	2005	YES	1	NO
Nevada	2003	YES	2	NO
New Hampshire	2003	YES	3	NO
New Jersey	2000	YES	4	NO
New Mexico	2004	NO	N/A	NO
New York	2008	YES	1	NO
North Carolina	2004	YES	1	NO
North Dakota	2013	NO	N/A	NO
Northern Mariana Islands	2003	YES	1	NO
Ohio	2003	YES	3	NO
Oklahoma	1995	YES	2	YES
Oregon	2006	YES	1	NO
Pennsylvania	2006	YES	1	YES
Puerto Rico	2010	YES	1	YES
Rhode Island	2003	YES	1	NO

Table E Continued

U.S. state/territory	Original year standards developed	Standards ever revised?	No. revisions	Currently under revision?
South Carolina	2007	NO	N/A	YES
South Dakota	2006	NO	N/A	YES
Tennessee	2004	YES	1	NO
Texas	1999	YES	1	NO
Utah	2012	YES	1	NO
Virgin Islands	2010	NO	N/A	NO
Virginia	2003	YES	1	NO
Washington	2005	YES	1	NO
West Virginia	2004	YES	1	NO
Wisconsin	2003	YES	3	NO
Wyoming	2001	YES	1	NO

Appendix

Table F State-by-State Organizational Analysis of Content Levels Within Prekindergarten Age 4 Learning Standards

	Level					
State/territory	1	2	3	4	5	No. content levels
Alabama	Area of development	Goal	Standard	N/A	N/A	3
Alaska	Domain	Subdomain	Domain component	Goal	Indicator	5
Arizona	Standard	Strand	Concept	Indicator	N/A	4
Arkansas	Strand	Benchmark	N/A	N/A	N/A	2
California	Domain	Strand	Substrand	Foundation	N/A	4
Colorado	Domain	Subdomain	Indicator	N/A	N/A	3
Connecticut	Domain	Strand	Learning progression	Indicator	N/A	4
Delaware	Domain	Subdomain	Learning opportunity	N/A	N/A	3
District of Columbia	Domain	Standard	Indicator	N/A	N/A	3
Florida	Domain	Component	Standard	Benchmark	N/A	4
Georgia	Domain	Strand	Standard	Indicator	N/A	4
Guam	Domain	Standard	Indicator	N/A	N/A	3
Hawaii	Domain	Strand	Topic	Unlabeled	N/A	4
Idaho	Domain	Subdomain	Goal statement	Developmental growth	Indicator	5
Illinois	Domain	Goal	Standard	Benchmark	N/A	4
Indiana	Standard area	CCSS	Foundational skill	Skill	N/A	4
Iowa	Content area	Unlabeled	Standard	Benchmark	N/A	4
Kansas	Domain	Strand	Substrand	Standard	N/A	4
Kentucky	Content area	Standard	Benchmark	Developmental continuum	N/A	4
Louisiana	Domain	Subdomain	Standard	Indicator	N/A	4
Maine	Domain	Element	Indicator	N/A	N/A	3
Maryland	Dimension	Standard	Indicator	Objective	N/A	4
Massachusetts	Curriculum area	Strand	Standard	N/A	N/A	3
Michigan	Domain	Expectation	Indicator	N/A	N/A	3
Minnesota	Domain	Component	Indicator	N/A	N/A	3
Mississippi	Area	Strand	Anchor standard	Standard	N/A	4
Missouri	Content component	Standard	Indicator	N/A	N/A	3
Montana	Domain	Subdomain	Standard	Benchmark	N/A	4
Nebraska	Domain	Unlabeled	Expectation	N/A	N/A	3
Nevada	Domain	Standard	Indicator	N/A	N/A	3
New Hampshire	Domain	Strand	Construct	Indicator	N/A	4
New Jersey	Content area	Strand	Subheading	Standard	N/A	4
New Mexico	Domain	Outcome	Indicator	N/A	N/A	3
New York	Domain	Unlabeled	Benchmark	Indicator	N/A	4

Table F Continued

State/territory	Level 1	2	3	4	5	No. content levels
North Carolina	Domain	Subdomain	Goal	Indicator	N/A	4
North Dakota	Domain	Element	Topic	Indicator	N/A	4
Ohio	Domain	Strand	Topic	Standard statement	N/A	4
Oklahoma	Domain	Standard	Indicator	N/A	N/A	3
Oregon	Domain	Element	Example	N/A	N/A	3
Pennsylvania	Learning area	Standard area	Standard	Concept and competency	N/A	4
Puerto Rico	Area of learning	Standard	N/A	N/A	N/A	2
Rhode Island	Domain	Component	Goal	Indicator	N/A	4
South Carolina	Area of development	Unlabeled	Standard	Indicator	N/A	4
South Dakota	Area	Standard	Benchmark	N/A	N/A	3
Tennessee	Domain	Strand	Unlabeled	Standard	N/A	4
Texas	Domain	Skill area	Outcome	N/A	N/A	3
Utah	Learning area	Strand	Anchor standard	Indicator	N/A	4
Vermont	Domain	Goal	N/A	N/A	N/A	2
Virgin Islands	Domain	Component	Indicator	N/A	N/A	3
Virginia	Content area	Foundation block	Indicator	N/A	N/A	3
Washington	Area of development	Topic	Unlabeled	N/A	N/A	3
West Virginia	Domain	Area	Cluster	Standard	N/A	4
Wisconsin	Domain	Subdomain	Standard	N/A	N/A	3
Wyoming	Domain	Subdomain	Skill	N/A	N/A	3

Appendix G

Table G Major Areas of Learning and Content Across Prekindergarten **Age 4 Learning Standards in the United States, District of Columbia, and U.S. Territories**

U.S. state/ territory	Language and literacy	Approaches to learning	Cognitive development	Math[a]	Social studies	Science	Creative arts	Technology[b]	Social/ emotional development[c]	Physical development
Alabama	X	X		X		X	X	X	X	X
Alaska	X	X	X	•	•	•	•	•	X	X
Arizona	X	X		X	X	X	X		X	X
Arkansas	X		X	•	•	•	X	•	X	X
California	X			X					X	X
Colorado	X	X		X	X	X	X		X	X
Connecticut	X		X	X	X	X	X		X	X
Delaware	X	X		X		X	X		X	X
District of Columbia	X	X		X	X	X	X		X	X
Florida	X	X	X	•	•	•	•	•	X	X
Georgia	X	X	X	•	•	•	•		X	X
Guam	X		X	•	•	•			X	X
Hawaii	X	X	X	•	•	•	•	•	X	X
Idaho	X	X		•	•	•	•		X	X
Illinois	X			X	X	X	X		X	X
Indiana	X	•		X	X	X	X		X	X
Iowa	X	X		X	X	X	X		X	X
Kansas	X	X		X	X	X	X		X	X
Kentucky	X		X	X	X	X	X		X	X
Louisiana	X	X	X	•	•	•	•		X	X
Maine	X	X		X	X	X	X		X	X
Maryland	X		X	•	•	•	•		X	X
Massachusetts	X			X	X	X	X	X	•	•
Michigan	X	X		X	X	X	X	X	X	X

Table G Continued

U.S. state/ territory	Language and literacy	Approaches to learning	Cognitive development	Math[a]	Social studies	Science	Creative arts	Technology[b]	Social/ emotional development[c]	Physical development
Minnesota	X	X	X	•		•	X		X	X
Mississippi	X	X		X	X	X	X		X	X
Missouri	X			X		X			X	X
Montana	X	•	X	•		•	•	•	X	X
Nebraska	X	X		X		X	X	•	X	X
Nevada	X	•		X	X	X	X	•	X	X
New Hampshire	X	•	X	•	•	•	X		X	X
New Jersey	X	X		X	X	X	X	X	X	X
New Mexico	X	X		X	X	X	X		X	X
New York	X	X	X	•	•	•	•	•	X	X
North Carolina	X	X	X	•		•	•		X	X
North Dakota	X	X		X	X	X	X		X	X
Ohio	X	X	X	•	•	•			X	X
Oklahoma	X	X		X	X	X	X		X	X
Oregon	X	X		X	X	X	X		X	X
Pennsylvania	X	X		X	X	X	X	•	X	X
Puerto Rico	X		X	X			X		X	X
Rhode Island	X		X	X	X	X	X		X	X
South Carolina	X	X		X					X	X
South Dakota	X	X		X	X	X	X	•	X	X
Tennessee	X	X		X	X	X	X	•	X	X
Texas	X			X	X	X	X	X	X	X
Utah	X	X		X	X	X	X		X	X
Vermont	X	X		X	X	X	X		X	X
Virgin Islands	X	X		X	X	X	X		X	X
Virginia	X			X	X	X	X		X	X
Washington	X	X	X	X	X	X	X		X	X
West Virginia	X			X		X	X		X	X
Wisconsin	X	X	X	•		•			X	X
Wyoming	X			X	X	X	X		X	X
Total	*54*	*39*	*20*	*54*	*42*	*51*	*48*	*16*	*54*	*54*

Note. $N = 54$. Crosses indicate areas of content and learning that are identified by their name alone. Solid circles indicate areas of content and learning identified by name within a different area of learning and content that did not bear its name. [a]Standards content in the areas of math, social studies, science, and creative arts were categorized under cognitive development and general knowledge in many states and territories. [b]Technology standards content was categorized under either science or cognition/cognitive development in 10 states. Four states included standards content in approaches to learning under cognitive development/cognition, creative expression, or social/emotional development. [c]Standards content in social/emotional development and physical development was categorized under health education in one state.

Appendix H

Table H State-by-State Data From the Online Study Survey About Alignment Between Prekindergarten Age 4 Learning Standards and the Kindergarten English Language Arts Common Core State Standards

U.S. state/territory	Adopted CCSS	Standards aligned with K ELA CCSS	Standards revised to align with K ELA CCSS
Alabama	NO	N/A	N/A
Alaska	NO	N/A	N/A
Arizona	YES	YES	NO
Arkansas	YES	YES	NO
California	YES	YES	NO
Colorado	YES	YES	NO
Connecticut	YES	YES	YES
Delaware	YES	YES	YES
District of Columbia	YES	YES	NO
Florida	NO	N/A	N/A
Georgia	YES	YES	YES
Guam	YES	NO	N/A

Table H Continued

U.S. state/territory	Adopted CCSS	Standards aligned with K ELA CCSS	Standards revised to align with K ELA CCSS
Hawaii	YES	YES	NO
Idaho	YES	YES	YES
Illinois	YES	YES	YES
Indiana	YES	YES	NO
Iowa	YES	YES	NO
Kansas	YES	YES	YES
Kentucky	YES	YES	NO
Louisiana	YES	YES	YES
Maine	YES	YES	NO
Maryland	YES	YES	NO
Massachusetts	YES	YES	YES
Michigan	YES	YES	YES
Minnesota	YES	YES	YES
Mississippi	YES	YES	NO
Missouri	YES	YES	NO
Montana	YES	YES	YES
Nebraska	NO	N/A	N/A
Nevada	YES	YES	NO
New Hampshire	YES	NO	N/A
New Jersey	YES	YES	YES
New Mexico	YES	YES	NO
New York	YES	YES	YES
North Carolina	YES	YES	NO
North Dakota	YES	YES	NO
Northern Mariana Islands	YES	YES	YES
Ohio	YES	YES	YES
Oklahoma	YES	YES	YES
Oregon	YES	NO	N/A
Pennsylvania	NO	N/A	N/A
Puerto Rico	NO	N/A	N/A
Rhode Island	YES	YES	NO
South Carolina	YES	NO	N/A
South Dakota	YES	YES	NO
Tennessee	YES	YES	N/A
Texas	NO	N/A	N/A
Utah	YES	YES	NO
Virgin Islands	YES	YES	NO
Virginia	NO	N/A	N/A
Washington	YES	YES	NO
West Virginia	YES	YES	YES
Wisconsin	YES	YES	NO
Wyoming	YES	NO	N/A

Note. CCSS = Common Core State Standards. K ELA = kindergarten English language arts.

Suggested citation:

DeBruin-Parecki, A., & Slutzky, C. (2016). *Exploring pre-K age 4 learning standards and their role in early childhood education: Research and policy implications* (Policy Information Report; Research Report No. RR-16-14). Princeton, NJ: Educational Testing Service. http://dx.doi.org/10.1002/ets2.12099

Action Editor: James Carlson

Reviewers: Danielle Guzman-Orth and Debra Ackerman