

## RESEARCH ARTICLE

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### An Investigation of Kindergarten Readiness Based on Early Learning Inventory Scores

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The term “kindergarten readiness” lacks a formal definition. The need for a single, widely accepted definition for this term is necessary for teachers and educational leaders to prepare children and their families for the start of formal education. This study was conducted to understand the perceptions of preschool and kindergarten teachers concerning typically developing students on day 60 of kindergarten in the state of North Carolina. Focus groups were used to determine particular skills that a kindergartener should exhibit by that point in school in order to be successful during that year. Both groups of teachers were knowledgeable about the developmental continuum kindergartners should follow in order to achieve needed skills according to the North Carolina Early Learning Inventory. A second finding was that kindergarten teachers scored students lower than preschool teachers on the anticipated ability of their students to achieve a skill. All teachers considered some skills were introduced in the inventory prematurely. Participants within this study perceived school readiness as skills that students should exhibit on day 60 of kindergarten that would allow for them to have a successful kindergarten year. Some skills that would be typical on day 60 of kindergarten are that students are: able to control their emotions and understand the emotions of others, understand how to behave in familiar environments when routines and procedures do not change, and are able to discriminate the sound that an alliteration and rhyme make but may not be able to explain the reason for the alliteration or rhyme.

*Keywords:* Preschool, Kindergarten, Kindergarten readiness, North Carolina Early Learning Inventory, Teaching Strategies *GOLD*©

## INTRODUCTION

At this point in the history of early childhood education, the term ‘kindergarten readiness’ has eluded an accepted, formal definition of the meaning of the phrase. The notion of a child being “ready” for kindergarten means different things to different stakeholders, and the lack of agreement on a formal definition between parents, teachers, administrators, state and national leaders, and

researchers is particularly troublesome. The absence of such an important definition is particularly alarming considering the large amount of funding that has been allocated to prepare children for kindergarten from federal, state, and local entities in a variety of preschool programs throughout the United States over several decades.

For example, the U. S. Department of Health and Human Services provided Head Start \$10,748,095,000 in 2021 to ensure that qualifying children in poverty were “ready” for school (Linehan, 2021). The State of North Carolina, the setting of our study, provided a total of \$29,280,000 in the fiscal year 2019-2020 to administer the statewide North Carolina Pre-Kindergarten program (NC Pre-K) that serves four-year-old students to help them to become ready to enter kindergarten (Smart Start, 2020). These programs allocate many millions of dollars aimed at preparing children for their first year of school without an established definition of precisely what kindergarten readiness actually looks like. In other words, many stakeholders are aiming at not only different targets, but moving targets.

## BACKGROUND OF THE PROBLEM

While traditional education spans 13 years (K-12), a preschool teacher has a small window of opportunity to work with children before what is considered formal schooling begins: “Identifying early school readiness characteristics is essential in preparing children physically and emotionally to meet the demands of early schooling successfully” (Miller & Kehl, 2019, p. 445). Consequently, there is a need to define those skills that will lay a foundation upon which K-12 teachers can enhance learning beyond the preschool years, facilitating the education system’s ultimate goal of creating life-long learners. Consequently, preschool educators need to know what skills in each child need attention when working with them before they enter kindergarten. Kindergarten teachers must also be aware of those skills. Knowing the key skills necessary for success in kindergarten could allow parents and preschool teachers to remediate students who are lacking in those specific skills, were those readiness skills clearly defined and agreed upon. If defined skills are taught promptly and properly in preschool, the assumption is that the child will likely have more success in kindergarten and potentially throughout their education journey.

Established research suggests that quality early childhood education can have lasting benefits for children. In 2005, a policy brief created by the National Institute for Early Education Research stated that, “High-quality preschool education can support early development in ways that yield long-term social and emotional benefits” (Boyd et al., 2005, p. 1). This policy brief examined many studies that investigated early childhood program demonstration projects as far back as the 1960’s and 1970’s. A few of the projects studied were the High Scope Perry Preschool Project, Syracuse University’s Family Development Research Program, and the Houston Parent Child Development Center.

Additional research studies, have shown that high quality preschool programs can develop critical skills in children, who in turn experience growth that sustains them throughout their high school years (Schweinhart, 2003). Programs such as Head Start have continued to provide high-quality services for over 50 years to increase the readiness of children (and families) rising out of poverty

and becoming productive citizens of our society. More recently, Early Head Start has seen even more substantial positive impacts on the children and families they serve.

Based on such studies, governmental agencies, nonprofits, and private foundations have increased opportunities so that children can begin kindergarten ready to learn. These varied preschool initiatives have been provided for decades in hopes that students entering kindergarten are ready to learn on the first day of school and have the opportunities to gain skills early-on that will increase the likelihood of successful schooling and long-lasting positive effects throughout their lives. Yet according to Hover in 2014, “one third of the nation’s children were unprepared for kindergarten” (p. 57). Much money and effort has been invested in early childhood programs by federal and state governments without a widely accepted definition of kindergarten readiness.

## Statement of the Problem

With the heightened accountability of preschool programs by state and federal lawmakers, owing largely to the *Every Student Succeeds Act* (2015), a formal definition of ‘kindergarten readiness’ is needed. This study sought to contribute to the literature concerning what it means to be ‘kindergarten ready’ in one state. The study involved interviewing experienced preschool and kindergarten teachers who worked with young children each day to understand their perceptions of the term “kindergarten ready”; more specifically, they were asked to define what a child’s skills and competencies need to be at day 60 of kindergarten to be successful in kindergarten and beyond. Specifically, this study examined the perceptions of experienced kindergarten and preschool teachers in North Carolina to determine the similarities and differences between these early educators’ perceptions of a developmental continuum called the *North Carolina Early Learning Inventory* (NCELI) (NCDPIb, n. d.). This instrument is widely used to measure kindergartners’ skills on day 60 of school, the date when the NCELI is administered in North Carolina kindergarten classrooms. It is considered a formative assessment by the North Carolina Department of Public Instruction’s Office of Early Learning and measures students’ developmental levels in five areas. By investigating data gathered while administering the NCELI, it was hoped that a better understanding of teacher perceptions of typical students’ performance on day 60 of kindergarten would be gained, establishing a more concrete definition of kindergarten readiness.

The NCELI assessment was designed to help teachers understand student weaknesses and strengths to then modify their instruction accordingly. As part of the assessment, kindergarten teachers take anecdotal notes during the first 60 days of kindergarten regarding their interactions with each student in order to score students’ achievements on the NCELI components. These notes focus on particular milestones that the children exhibit each day. The notes also help to determine a student’s progress on the assessment continuum. From the data gathered through the notes, observers can determine whether a child has reached particular developmental milestones indicated on the instrument. The kindergarten teacher then assigns the students a score on a continuum according to what the teacher sees that the child has achieved.

The early learning inventory is designed to assess five areas of development for the early childhood learner. Those areas are: social-emotional, math, approaches to learning, language and literacy, and physical development. The continuum on which the teacher rates students in each of these areas

has a numerical range of 1-14. These developmental levels are all adopted from the *Teaching Strategies GOLD® Continuum*. The *Teaching Strategies GOLD® Continuum* is an instrument widely used across the country and throughout North Carolina in preschool and kindergarten to gauge development.

The *GOLD® Continuum* is also a developmental instrument that was designed to describe a typical child's major milestones each year from birth through third grade. The continuum contains milestones that are assigned according to students' grade or age based on continuous specific developmental progressions. As with curricular content standards, in the case of preschool, those teachers can examine milestones and determine if a child is keeping pace with milestones that correlate to their age or grade level. Kindergarten teachers then use observations and evidence to determine whether their students have mastered appropriate developmental skills. The difference between the NCELI scores and the *GOLD® Continuum* is that the former has fewer measures than the latter. The NCELI measures only a part of a students' development, whereas the *GOLD® Continuum* takes a more holistic approach to assessing the child. Examples of associated activities from the *Teaching Strategies GOLD® Continuum* are "matching rhyming cards to pictures" and "counts 28 steps to the cafeteria" (Lambert et al., 2010). (Additional desired kindergarten objectives and other specific examples of activities can be found in the *GOLD® Continuum* publication.) The following table lists the five developmental domains of learning that are part of the NCELI and the *GOLD® Continuum* in more detail (see Table 1).

**Table 1**

<i>Domains and Developmental Milestones</i>	
<b>Domain of Learning</b>	<b>Developmental Progress</b>
Social-emotional	Manages feelings Responds to emotional cues Interacts with peers Solves social problems Follows limits and expectations
Math	Counts Quantifies Connects numerals and quantities
Approaches to Learning	Attends and engages
Language	Notices and discriminates rhyme Notices and discriminates alliteration Tells about another time or place Follows directions
Physical	Uses fingers and hands

## Purpose of the Study

This study sought a better understanding of what kindergarten readiness means according to preschool and kindergarten teachers. The aim was that this study could help foster a more clear understanding of the phrase kindergarten readiness among preschool and kindergarten teachers, ultimately helping students to transition and become better equipped to be successful in school. Responses of participants were collected and analyzed to determine their perceptions of the main skills a student needs to be successful on day 60 of their kindergarten year.

## Research Questions

The study was guided by the following research questions:

RQ1: In what ways do kindergarten teachers perceive kindergarten readiness as measured on day 60 of a student's kindergarten year?

RQ2: In what ways do preschool teachers perceive kindergarten readiness as measured on day 60 of a student's kindergarten year?

RQ3: What are the similarities and differences between kindergarten and preschool teachers' perceptions of kindergarten readiness on day 60 of students' kindergarten year?

Kindergarten has traditionally been the time when a child's home life meets the public school arena for the first time. Parents and children are exposed to the demands and expectations of an environment that is traditionally more structured and begins to measure a child's success, failure, or acceptance in K-12 schooling in well-defined ways. When kindergarten teachers do not agree on expectations for pre-kindergarten skills as they relate to a standardized inventory such as the NCELI, instructional misalignment can affect future student progress. Determining a widely accepted definition of kindergarten readiness can better ensure that resources are best used for the goal of preparing the greatest number of students to enter kindergarten.

## Research Design and Methodology

Data collected in this study was part of a larger project headed by research faculty at a large southeastern university. The larger research project included the same research questions but added another layer which sought to determine scores across North Carolina for kindergarten readiness skills based on NCELI scores. This ongoing research gives a better understanding of what it means to be ready for kindergarten, particularly in North Carolina, by gathering perceptions from experienced preschool and kindergarten teachers.

## Assumptions

There were several assumptions made regarding this study. First, it was assumed that the teachers interviewed had studied the *Standard Course of Study* for preschool and kindergarten in North Carolina before the research questions were asked. In other words, they would have already studied the topics relevant to the research questions before answering them. Secondly, it was assumed that their perceptions of kindergarten readiness would be similar and relate directly to the *Kindergarten Standard Course of Study* for kindergarteners and the *North Carolina Foundations for Early*

*Learning and Development*, which is a statewide developmental continuum for preschool students. Finally, it was assumed that these professionals answered the questions presented honestly, based on their educational knowledge and personal experiences.

## LITERATURE REVIEW

The scholarly literature regarding kindergarten readiness has evolved and expanded through time, however, it still shows a recurring theme reflecting the notion that there is no one specific accepted definition of kindergarten readiness. This situation exists even though the phrase is and has been used widely throughout the educational system in the United States for over 30 years. There is, however, agreement that the definition of kindergarten readiness is multifaceted, complex, and difficult to address (Akhtar & Bilal, 2018; Altun, 2018).

Early studies sought a definition through the voices of kindergarten teachers. A large study conducted by the National Educational Goals Panel (1993) surveyed kindergarten teachers nationally to reach a consensus for kindergarten readiness (Heaviside, 1993). The group addressed three research areas: public school kindergarten teachers' judgments and beliefs about kindergarten readiness; the characteristics of the teachers' kindergarten classes and their practices in these classes; and teachers' backgrounds. Almost all teachers (96%) interviewed believed that children should be: Physically healthy, rested and well nourished. A majority also believed that children should be able to communicate wants, needs, and thoughts verbally and that enthusiasm and curiosity are more important for kindergarten readiness than knowledge of the alphabet or counting ability (Heaviside, 1993). The study concluded, "At present, there is no direct measure of kindergarten readiness, nor is there common agreement on the qualities of early learning and development that are critical for readiness or on the activities that foster readiness" (Heaviside, 1993, p. 11).

A more recent study involved interviewing both teachers and parents. "In the United States, the most important early kindergarten readiness qualities identified by both parents and teachers are: (1) being well rested and physically healthy, (2) effectively communicating needs, wants, and thoughts, and (3) having enthusiasm and curiosity for approaching new activities" (Miller & Kehl, 2019, p. 445). It is noteworthy that these skills were not necessarily academic ones and were tied to behaviors typically displayed when working with groups or individuals.

Another common qualification considered for kindergarten readiness over time has been simply the age of the child. In many states, children are considered school ready by chronological age. Some researchers suggested that children can enter kindergarten with or without certain developmental skills. Through a study conducted by Lincove and Painter in 2006, it was found that, "Despite evidence that older students have an academic advantage in elementary school, our results suggest that redshirting by parent preference or school recommendation is not an effective strategy for improving high school achievement, graduation rates, or college enrollment" (Lincove & Painter, 2006, p. 173).

Parents and educators realized that every child who enters kindergarten at the age of five will not have the same skills. Children develop at different rates and a child's previous experiences and

background play a large part in their readiness for school. Consequently, in addition to age, behavioral skills became prominent to deciding kindergarten readiness. Parents and teachers agreed that students who are able to focus on their learning without inappropriate behaviors are able to flourish within a school setting. Children who demonstrate appropriate behavioral skills were considered more ready for kindergarten and showed more engagement in the classroom. Simply put, children who are on-task and focused on learning were seen as more apt to be successful than those not exhibiting positive classroom behaviors. This subject is important for children in poverty who have been shown to exhibit higher rates of behavioral challenges and lower cognitive and language skills when entering kindergarten. The research indicated that children in poverty needed more assistance reaching kindergarten readiness due to the underlying factors of their situation.

Hartman et al. (2017) completed a study to investigate whether behavior skills in children at age four had an effect on their kindergarten year. In particular, the researchers wanted to investigate children who were ethnically diverse, had a low socioeconomic status, and attended school in an urban setting. The researchers wanted to know to what extent these risk factors positively or negatively affected a child's experience in kindergarten. The findings of the study determined that a child's behavior when they were four years old did affect their readiness for kindergarten, as well as their success in their kindergarten year. In other words, if a child were able to control behavior in preschool, they were able to show positive rather than negative behavior in kindergarten. Negative behaviors were directly related to lower outcomes and lower cognitive and language skills in their findings. Children who had limited atypical behavior before beginning kindergarten were more prepared for it and had higher outcomes once there.

It was also noted that behavior skills are important for kindergartners and affected teachers' grading tendencies as well. Some teachers were found to have a negative bias when grading students with behavioral issues. The researchers found that "Classroom grades are more likely to be influenced by a child's interactions and behavior with the teacher during the school year than are standardized test scores" (Hartman et al., 2017, p. 266). Children who were on task and focused during instruction had more positive learning interactions with their teacher. In turn, they were able to gain more skills and learning outcomes during the school day. The study also determined a child's behavior problems had a greater impact on school performance than socioeconomic level.

## Perceptions of Preschool

Manigo and Allsion (2017) conducted a study to determine parents' perceptions of preschool. In particular, they wanted to understand parents' reasons for letting (or not allowing) their child to attend a preschool program before kindergarten. They used experiences from parents in a large urban district in the southeast. They interviewed 12 parents, six of whom sent their child to preschool, and six who provided kindergarten readiness at home. The researchers wanted to understand parents' thoughts relating to the importance of attending preschool and the value of their child doing so.

An important outcome of the study was that 9 of the 12 parents believed preschool helped a child "develop positive emotions about school" (Manigo & Allsion, 2017, p. 20). Parents of children

who attended preschool felt their children had a positive feeling about school, and their child's communication skills and self-management of their emotions were strengthened by the preschool. Parents felt that a child should learn certain skills before they enter kindergarten. They believed that if they were unable to teach their child these skills before they entered kindergarten, their child should attend a preschool program. Since only 6 of the 9 actually had children in preschool, 3 of those who did not would clearly have participated in preschool for their child were it available.

Supplemental funding for public preschool has typically targeted low SES children. According to the U. S. Department of Education (USDOE, 2014), in 2013, there were 4,112,347 four-year olds eligible to attend publicly funded preschool programs. This eligibility is determined by income levels and location. Regardless of eligibility, only 1,649,607 four-year olds attended a publicly funded preschool program that year (USDOE, 2014, p. 3). In other words, only 40% of children who were eligible actually attended. This would leave 60% of children who were eligible for preschool not attending.

Duncan and Magnuson (2013) examined the effectiveness of preschool in 2013 by summarizing expenditures in early childhood education programs and comparing them to the outcomes of the children involved. They wanted to determine if the investments, in particular early childhood preschool programs were cost effective. Their results showed minimal long-term benefit of some early childhood programs. They went on to determine that the beneficial effects of interventions to raise intelligence in young children faded over time (i.e., a "fadeout effect" (Cohen, 2015)). However, the positive effects of some well-known early childhood programs, when separated from the others, had "lasting positive effects on such outcomes. These outcomes were greater educational attainment, higher earnings, and lower rates of crime" (Duncan & Magnuson, 2013, p. 110).

The two most prominent programs within the study by Duncan and Magnuson (2013) were ones that had shown long-term growth among students who attended them. Students in these two programs did not have a fade out effect concerning academic attainment or success in elementary school but had long term positive effects such as greater high school graduation rates, reduced teen pregnancy, and less criminal behavior. Overall, "theories and evidence across the social sciences argue that early childhood may be a promising period for effective educational investments, particularly for disadvantaged children" (Duncan & Magnuson, 2013, p. 127). The study determined that effective and high-quality preschool services benefit disadvantaged children, and that continued spending should be made in the early childhood education.

## Kindergarten Readiness

Defining kindergarten readiness becomes more vital owing to recent changes made regarding higher academic standards for kindergarten students. Historically, kindergarten has served as a place for children to engage in natural discovery. With recent increased emphasis on school performance and the nationwide school accountability movement since No Child Left Behind, there has been greater importance placed on academic skills in kindergarten. One may have heard it stated, "Kindergarten is the new 1<sup>st</sup> Grade." If the characteristics of kindergarten are now more



academic in emphasis, there is greater need to prepare preschool teachers and parents on how to help future kindergarteners become school ready (Welch & White, 1999).

Kindergartners today are expected to learn and understand content that has been formerly taught in the first and even second grade. Children now need to enter kindergarten equipped and able to address the increased academic demands of the kindergarten classroom. They are also expected to be socially, emotionally, and intellectually ready. Communication levels and ability to get along with peers are also skills deemed to be important (Miller & Kehl, 2019).

The North Carolina Board of Education is responsible for overseeing the *North Carolina Standard Course of Study* and as such have provided a standard course of study to teachers at every grade level including kindergarten. According to the *Introduction* found in the *Quick Reference Guide for the North Carolina Standard Course of Study in Kindergarten: North Carolina's Standard Course of Study* defines the appropriate content standards for each grade level and each high school course to provide a uniform set of learning standards for every public school in North Carolina. These standards define what students should know and be able to do by the end of a grade and/or course (NCDPI, 2021, p. 5.)

Kindergarten teachers in the state are required to use the *Kindergarten Standard Course of Study* to provide instruction in their classrooms. These standards are used so all kindergarten teachers will have a common instructional focus in all kindergarten classrooms statewide.

## Readiness Inventories

Another theme within the literature was the need for a kindergarten readiness inventory that would measure the skills needed for kindergarten and would be administered by preschool or kindergarten teachers. Saluja et al. (2000) surveyed every state to ascertain if (and how) they assessed kindergartners with readiness assessments. The study was conducted in hopes that teachers could be informed about curriculum needs and production, as well as maintain accountability for growth in their kindergarten classroom. The study found that age was the primary determinant of readiness for kindergarten across the United States. Saluja et al. (2000) also reiterated that one reason for using age was that it was a simple, straight-forward measure. In addition, there was no formal accepted definition of kindergarten readiness.

Several states were investigating kindergarten readiness at the time of their study, and some kindergarten readiness assessments were being created locally. However, when readiness assessments are developed locally, they are typically not a product of systematic research. Local guidelines and teacher opinions often prevail without using supporting research on the topic. However, “understanding the condition of children as they enter school can provide clues to help parents and teachers understand children’s performance later in their school career” and was assumed that “something was better than nothing” (Saluja et al., 2000, p. 1). These researchers indicated that even in 2000, there had been an increase in accountability and student performance over time. In addition, they suggested that a definition of kindergarten readiness and entry assessments could assist with this increased level of accountability and that without a proper definition; there cannot be a valid entry assessment.

The North Carolina Early Education Task Force first published *North Carolina Foundations for Early Learning and Development* in 2013 to help the educator understand developmental guidelines and typical behaviors in order to help children prepare for kindergarten. This document gave information for all early childhood caregivers across the state regarding developmental levels of children that they serve. All early childhood educators within the state are still encouraged to use this continuum as a guide for teaching and learning (North Carolina Foundations for Early Learning and Development, 2013).

As mentioned previously, North Carolina has developed a formative assessment (NCELI) to help educators understand important kindergarten readiness skills and implementing its use in all public school kindergartens. The NCELI is intended to be a beginning of kindergarten formative assessment to inform kindergarten teachers of where their children are on a developmental continuum on day 60 of school. This assists teachers in determining the strengths and weaknesses of the development of their children towards the beginning of the school year. The assessment is not local but tied to a research-based nationwide developmental continuum, formulated through the state's Office of Early Learning and first used in the 2020-2021 school year.

*Teaching Strategies GOLD*® is a multifaceted form of assessment for children from birth through third grade. The *Teaching Strategies GOLD*® developmental assessment tool is used by all PreK teachers in North Carolina to determine the skills learned in the preschool setting and help ensure children are prepared to enter kindergarten. "Taking a whole-child approach, *GOLD*® assesses children's development and learning across four developmental domains (social emotional, physical, language, cognitive) and five content domains (literacy, mathematics, science and technology, social studies, and the arts)" (Lambert, 2020, p. 5). *Teaching Strategies GOLD*® allows teachers to assess their students throughout the school year to determine strengths and needs. This instrument is now used widely across the United States with more than 15 million children (Burts et al., 2016).

## METHODOLOGY

Kindergarten readiness continues to be an important issue surrounding the academic and social success of children as they begin their school experiences. Though it is a multidimensional concept, kindergarten readiness broadly means that a young child has developed the skills that will help them succeed during their first year of kindergarten (Altun, 2018). Children who exhibit this readiness typically go on to experience more academic and social achievements in school (Bingham & Whitebread, 2012). However, ambiguity naturally continues about what it means to be ready for kindergarten, warranting further exploration of this topic (Akhter & Bilal, 2018).

The purpose of this study was to understand how preschool and kindergarten teachers understand kindergarten readiness. Conversations from five focus group interviews in which preschool and kindergarten teachers discussed their experiences and perspectives about what constitutes kindergarten readiness provided the data for this study. The methodology used in this study and the focus groups are described in the sections that follow.

## Research Design

This research project utilized a basic, qualitative, interpretive design. Qualitative inquiry is appropriate for this study because of its broad approach to understanding social phenomena and effectiveness in exploring individuals' understandings of their experiences and how they develop these perceptions (Marshall & Rossman, 2006). Creswell (2013) wrote that qualitative methodology allowed researchers to extensively explore a concept and develop detailed understandings of complex issues. Merriman and Tisdale (2016) added that a basic interpretive, qualitative design is effective for understanding how participants interact with the world around them and attribute meaning to their experiences. A qualitative design was selected for this study because it explored teachers' understandings of the complex and often ambiguous phenomena of kindergarten readiness.

This qualitative research utilized a focus group design. According to Krueger and Casey (2015), focus groups involve more than just getting a group of people together to talk. Rather, they are used to better understand how people feel or think about an idea or issue. This design uses a series of planned discussions led by a skilled moderator and is intended to obtain perceptions about an area of interest in a non-threatening environment. According to established models, focus groups are generally composed of seven to 10 people, although they can be conducted with as few as four and as many as 12 (Krueger & Casey, 2015).

There are advantages to using focus groups. This method assumes that an individual's perspective does not develop in a vacuum. People often build their ideas by sharing them with others (Marshall & Rossman, 2006). As described by Krueger and Casey (2015), a focus group design presents a more natural environment for participants than does an individual interview. Focus group participants influence one another as they share their thoughts through active dialogue. Unlike a one-on-one interview with a researcher, exchanges between participants in focus groups imitate the everyday, lively dialogue in which people commonly engage (Krueger & Casey, 2015). Marshall and Rossman (2006) also noted that focus groups have high face validity because the method is readily understood.

A multiple-category focus group design was used to gather data in this research study. As described by Krueger and Casey (2015), this design involves multiple focus groups with more than one category of participants. Doing this allows the researcher to make comparisons from one group to another. In the current study, the researchers wanted to explore the perspectives of preschool teachers and kindergarten teachers who participated in the original focus groups.

## Setting

All focus groups were conducted using *Zoom* virtual meeting technology. Doing so enabled researchers to comply with safety protocols surrounding the Covid-19 pandemic. It also enabled the involvement of a wide range of participants from a broad geographical area. The focus group sessions were held on Mondays and Wednesdays between 2:00 pm and 5:00 pm in the spring semester of 2022. The study considered only kindergarten readiness in the state of North Carolina.

## Participants

According to Krueger and Casey (2015), focus groups are characterized by homogeneity. Participants are selected for them because they have characteristics in common that relate to the topic of interest. While randomization is important in research that seeks to infer, homogeneity of participants is valued more than randomization in focus group research. This homogeneity is important because the intent of focus group research is to understand how people within the groups perceive a situation. In this study, homogeneity was achieved by having only participants from North Carolina whose work meant that they had extensive knowledge about early childhood education in that state.

A series of five focus groups were held to gather data. Each focus group consisted of up to 10 participants. As the study was part of a larger study, participants in the focus groups included more than preschool and kindergarten teachers. Each focus group included a state regional consultant from the NCDPI's Office of Early Learning (OEL), at least one preschool teacher, at least one kindergarten teacher, a school-based administrator, and a content area expert. However, the data analysis for this study used only the responses of preschool and kindergarten teachers. Fifty-two participants were involved in the original study. Of the 52 participants, seven were preschool teachers, and 12 were kindergarten teachers. Therefore, this study was based on the responses of 19 participating preschool and kindergarten teachers.

Participants were selected in two ways. First, the Office of Early Learning (OEL) regional consultants drew upon their knowledge to nominate preschool teachers, kindergarten teachers, and school administrators that had exhibited successful experience with the NCELI and with Teaching Strategies *GOLD*© at the school level. Second, OEL regional consultants were assigned to participate in at least one focus group by their supervisors. Third, the Center for Educational Measurement and Evaluation (CEME) at the University of North Carolina-Charlotte, along with the OEL, identified content area experts for each focus group. All potential participants were contacted via email by CEME and invited to participate. Those who agreed to do so were asked to select one of the five focus groups in which to participate. No participant was involved in more than one focus group. No restrictions were placed on years of experience or other professional or personal factors.

## Instrumentation

The North Carolina Early Learning Inventory (NCELI) was essential to gather data for this study. As previously discussed, NCELI is an observation-based assessment used by classroom teachers to measure students' academic and social skills on day 60 of kindergarten. During each focus group breakout session, participants were asked to analyze three objectives of the assessment. Specifically, participants were asked to determine a score between 1 and 14 for each objective that best represented the skills that typically developing children would be able to demonstrate at the time the assessment is given. The NCELI scores are such that '1' is the lowest developmental rating and '14' is the highest. A rating of '1' corresponds to the age of birth to one-year old; '14' corresponds to an average student at the end of third grade. Examples of objectives that participants

used for those that were meeting expectations were, “Do bear and chair rhyme?” and “When asked what comes after 16, says, ‘17’ without beginning at one” (Lambert et al., 2010).

In addition to numerically rating each of the NCELI objectives, participants were asked to identify specific examples from their experiences that illustrated skills that typically developing children would exhibit on day 60 of kindergarten. For example, objective six on NCELI examines the ability of children to follow directions of two or more steps that relate to familiar objectives or experiences. Participants were asked to numerically rate this objective from 1 to 14. They were then asked to discuss examples of what this objective looks like in real kindergarten classrooms on the assessment day of school. Therefore, the researchers had two categories of data for analysis: the focus group ratings of each NCELI objective, and the comments from focus group participants about how the objectives happen in classrooms.

## RESULTS

Each panel generated findings about students’ expected performance on specific objectives of the NCELI on day 60 of kindergarten. Data analysis of the findings from each panel generated five themes:

- Kindergarten and preschool teachers exhibited strong agreement about students’ developmental continuum.
- Preschool teachers rated students slightly higher than kindergarten teachers.
- A misalignment existed between developmentally appropriate instruction and assessment.
- The importance of consistent procedures
- The importance of preschool education

### Theme 1: Strong Agreement About Students’ Developmental Continuum

The quality of experience and knowledge of the participants was evident within each focus group meeting. A significant theme was that kindergarten and preschool teachers consistently exhibited strong agreement about the developmental continuum that their students should follow to be successful during preschool and kindergarten. In all panels, both groups of teachers understood each other’s suggestions and comments.

For example, kindergarten and preschool participants in Panel 1 noted that students should be able to express and distinguish personal feelings from those feelings expressed in literature. Susie, a kindergarten teacher said, “They are able to identify basic emotions in literature, and they can look at a picture and know someone is sad.” Mia, A preschool teacher agreed, noting, “They can identify the emotions of someone in a story.” In addition, in Panel 2, all participants agreed that students should be able to follow behavioral limits and expectations. In Panel 3, all participants agreed that the objective requiring students to follow a logical sequence was demanding and that many students would not be fully proficient in this area.

Discussing students’ performance related to following logical sequence, Grace (kindergarten teacher) said, “Logical sequence is very hard for students. They have a lot of difficulty talking

about experiences in a logical sequence.” Madison (preschool teacher) responded, “They don’t always get beginning, middle, and end. They like to tell their favorite parts. If I ask questions, I can get beginning, middle, and end.” This level of agreement among participants was seen in all panels. The researchers noted that kindergarten and preschool teachers exhibited similar levels of knowledge, experience, and perceptions about students’ developmental levels.

## Theme 2: Preschool Teachers Rated Students Higher Than Kindergarten Teachers

Another key theme was that preschool teachers scored a typical student higher than did kindergarten teachers. Of nine objectives from the NCELI that were rated by preschool and kindergarten teachers, five were higher for preschool teachers. Examples are:

Objective 1: “Manages Feelings.” Preschool teachers rated students at Levels 5-6; kindergarten teachers rated them at Levels 4-6.

Objective 2: “Responds to Emotional Cues.” Preschool teachers rated students at Levels 6-7, but kindergarten teachers scored students at 5-6.

Objective 3: “Interacts with Peers.” Preschool teachers scored students at 6-8 while kindergarten teachers scored students at Levels 4-6.

Objective 7: “Follows Directions.” Preschool teachers scored students at Levels 6-8; kindergarten teachers scored students at Levels 6-7.

Objective 9: “Uses Fingers and Hands to Count.” Preschool teachers scored students at Levels 6-8 and kindergarten teachers scored students at Level 7.

Preschool and kindergarten teachers scored students the same on the following objectives: “Follows Limits and Expectations,” “Solves Social Problems,” and “Attends and Engages.” The only objective for which kindergarten teachers rated students higher than preschool teachers was “Tells About Another Place and Time.” On that objective, kindergarten teachers scored students at Levels 6-7 while the preschool teacher scored students at Level 6.

## Theme 3: Misalignment Between Appropriate Instruction and Assessment

Kindergarten and preschool teachers agreed that some objectives were developmentally inappropriate for their students on day 60 of kindergarten. Both groups of teachers suggested that these objectives were too advanced for the instruction that students would typically receive by that time. Therefore, students would need additional support and time to perform adequately on these objectives as compared to others. The objectives that participants referenced as being excessively difficult for students were “Manages Feelings,” “Responds to Emotional Cues,” “Attends and Engages,” “Tells About Another Place and Time,” and “Quantifies.”

Commenting on how students continue to develop the skill of quantification throughout the year, Ruby (a kindergarten teacher) said, “Students are not at 100% (with this objective) on the 60<sup>th</sup> day. They are increasing their accuracy. Throughout the year that’s what they’re doing.” Another kindergarten teacher, Jessie, noted, “Hierarchical inclusion is very difficult on the 60<sup>th</sup> day of

kindergarten. We start that concept in February.” When discussing the difficulties that students experience with the objective “Attends and Engaging” on the 60th day of school, Jude, a preschool teacher said, “I feel like there is a lot of executive functioning work going on. That’s a hard skill.” Describing the objective “Solves Social Problems,” Jude also noted, “Students are being introduced into a new environment of kindergarten. A Level 7 (on the NCELI) might be too high. They are experiencing problems they have never experienced before in a kindergarten setting.”

#### Theme 4: Importance of Consistent Procedures

Throughout the study, kindergarten and preschool teachers described the importance of teachers using consistent classroom procedures. They noted that kindergarten children perform more effectively when consistent classroom routines are in place. Sophia, a preschool teacher said, “They thrive off of routine, but they can follow unrelated directions. When their routines are off, they can still follow directions with a clarifying question.” For example, Sophia, a preschool teacher added:

Yesterday we had a three-hour delay. They did not have breakfast. Instead of going to the desks to eat breakfast, I needed them to come to the carpet to start class. Students were off their routine and got confused. They got a funny face. I cued them and they followed directions.

#### Theme 5: Importance of Preschool Education

Throughout the study, kindergarten and preschool teachers noted their perceptions based on experiences of the positive impact of preschool education. Specifically, they noted that children with preschool experiences would score higher on many of the objectives of the NCELI. While participants were asked to consider the ratings of kindergarten students regardless of whether they had preschool experiences, teachers still commented that preschool would improve students’ performance. For example, a preschool teacher commented, “Levels of typical ranges may change because of experiences that children may have. For example, PreK versus non-PreK.” Another preschool teacher added, “This skill would depend on whether the child had preschool.” When scoring the objective “Follows Directions,” Grace, a kindergarten teacher said, “I’m leaning toward a ‘7,’ especially for kids with no preschool experience.”

#### Panel 1

The first panel considered the Social and Emotional Domain of the NCELI. Participants were identifying behaviors within the areas of “Manages Feelings,” “Responds to Emotional Cues,” and “Interacts with peers.” These characteristics and skills fall under objectives 1 and 2 of the NCELI. One finding of this study was that the kindergarten and preschool teachers perceived kindergarten students do not have full control of their emotions and cannot control them appropriately by day 60 of kindergarten.

Participants also believed that kindergarten students understand that others have feelings but are unable to fully understand why their peers have particular emotions, as well as what causes them. They did feel that students at this point are typically able to show concern for each other. The panel also believed that kindergartners sometimes have difficulty forming groups of play, but typical students should be able to join groups of play. Kindergarten teachers agreed that the children should be able to join into groups of play of two or three, but preschool teachers considered that they should be able to join in groups of play of four or five.

## Panel 2

Panel 2 also discussed several topics from the Social and Emotional Domain, and one from the Cognitive Domain. The two objectives of the Social and Emotional Domain were “Follows Limits and Expectations” and “Solves Social Problems.” The one in the Cognitive Domain was “Attends and Engages” (Burts et al., 2016). All teachers said that students on the 60th day of school were able to understand that certain rules applied to the students’ school environment. For example, they all perceived that students knew that they needed to walk down the hallway quietly, and that this behavior was different from that of recess. Teachers also remarked that students had difficulty following social rules and following directions that were new.

Teachers perceived that students need assistance and support when experiencing new settings at school. One teacher commented that those who have attended preschool before kindergarten had more advanced skills in this area. All teachers agreed that kindergarten students on day 60 should be able to meet the objective, “Manage Classroom Rules, Routines, and Transitions with Occasional Reminders” (Burts et al., 2016).

Another topic discussed in the second panel was “Solves Social Problems.” All teachers agreed that students are able to negotiate and solve problems socially but at times need assistance from their teacher. As stated in the objective “Manages Feelings,” teachers said that students often needed assistance. In this area, the kindergarten teachers differed from preschool teachers. Kindergarten teachers thought that students on day 60 are more advanced in these skills than did preschool teachers. Both kindergarten and preschool teachers perceived that students are able to “Suggest Solutions to Social Problems” (Burts et al., 2016).

The last topic discussed in Panel 2 was part of the Cognitive Domain. The objective under this particular domain was “Attends and Engages” (Burts et al., 2016). Both kindergarten and preschool teachers perceived this was a difficult task for kindergartners on the 60th day. They agreed that kindergartners would need more assistance with this in order to be successful. The preschool teacher in Panel 2 had concerns that unless the instruction was relevant to the students, they would not be able to meet this objective. Teachers in this panel agreed that students should be at a level of “Sustains Work on Age-Appropriate, Interesting Tasks; Can Ignore Most Distractions and Interruptions” (Burts et al., 2016).

## Panel 3



Panel 3 examined three objectives. Two were in the Language Domain, and one was in the Physical Domain. The objectives “Follows Directions” and “Tells About Another Place and Time” were in the Language Domain. The objective “Uses Fingers and Hands” was under the Physical Domain (Burts et al., 2016).

The first topic discussed by Panel 3 was “Follows Directions.” Teachers noted that kindergarteners could follow directions throughout the school day with gentle reminders. Preschool teachers made the comment that students had difficulty at this developmental stage and had difficulty following directions when routines or procedures changed. They said that students could be successful if routines and procedures stayed the same. The two groups of teachers disagreed on the continuum levels; kindergarten teachers scored the typical student lower on the continuum. Kindergarten teachers perceived that students could “Follow Directions of Two or More Steps that Relate to Familiar Objects and Experiences.” Preschool teachers perceived that students should “Follow Detailed, Instructional, and Multistep Directions.” Kindergarten teachers marked typically developing students lower on the continuum, but the preschool teachers scored the typical student higher (Burts et al., 2016).

The second topic under the Language Domain for Panel 3 was, “Tells About Another Place and Time.” decided this was a difficult task for a student on day 60. The teachers agreed it was difficult for students to tell a story in logical sequence. They often remember just the highlights. All teachers agreed that kindergarten students on the 60th day should master the objective, “Tells Stories About other Times and Places that have a Logical Order and that Include Major Details.” Even though they perceived this objective should be mastered by then, they felt this was a very difficult objective to master at this developmental stage.

The third topic within Panel 3 fell was in the Physical Domain. The objective was “Uses Fingers and Hands.” Both sets of teachers agreed that students on the 60th day should be able to use their fingers and hands appropriately with scissors. They concluded that more practice in this area would improve students’ skill for this objective. In this panel, kindergarten teachers again scored students lower than did preschool teachers who participated. Preschool teachers perceived that typical students could achieve the higher level on “Uses Small, Precise Finger and Hand Movements.” Kindergarten teachers decided that their typical students would achieve a lower score on this objective (Burts et al., 2016). Again, kindergarten teachers were working with both students who had attended preschool and those who had not, which may have explained their scores being higher than the preschool teachers.

## Panel 4

The Panel 4 participant (a kindergarten teacher) discussed two objectives from the Literacy Domain. These objectives were “Notices and Discriminates Rhyme” and “Notices and Discriminates Alliteration.” The teacher thought that students are able to discriminate rhyme with pictures and through sound. She scored a typically developing student on the evaluation day as a student who could “Decide Whether Two Words Rhyme” (Burts et al., 2016).

The second objective for Panel 4 was “Notices and Discriminates Alliteration.” The teacher suggested that students can hear alliteration but not always know the letter that produced the alliteration. She perceived that a typical student would meet the objective, “Match Beginning Sounds of Some Words” (Burts et al., 2016).

## Panel 5

Panel 5 examined three goals in the Math Domain. Those objectives were “Counts,” “Quantifies,” and “Connects Numerals and Quantities” (Burts et al., 2016). The group of teachers perceived that typical students by the evaluation day should be able to count to 10. They added that this is usually rote counting. They felt that students could master, “Verbally Count to 20; counts 10-20 Objects Accurately; Know the Last Number; State How Many in All; Tell what Number (1-10) comes Next in Order by Counting” (Burts et al., 2016).

The second objective for Panel 5 was “Quantifies.” There was much discussion that this objective was difficult for students to master by day 60 of kindergarten because it is usually not taught by then. Teachers recalled that it was not usually until later in the school year but might be taught throughout the year. Teachers said students should accomplish the skill “Makes sets of 6-10 Objects and then Describes the Parts; Identifies which Part has More, Less, or the Same (Equal); Counts All or Counts on to Find Out How Many” (Burts et al., 2016). It was interesting to know that the teachers were required to assess this objective often before students may not be able yet to understand the concept.

The third objective was “Connects Numerals and Quantities.” Teachers in this panel expressed that typical students on day 60 of school should achieve two objectives: “Identifies Numerals to 10 by Name and Connects Each to Counted Objects” and “Identifies Numerals to 20 by Name and Connects each to Counted Objects; Represents how many by Writing One-Digit Numerals and some Two-Digit Numerals.” Kindergarten and preschool teachers agreed on students having these abilities within the Math Domain.

## SUMMARY OF FINDINGS

The first finding of the study was that, in general, kindergarten and preschool teachers were very knowledgeable about their students and the developmental continuum that their students should follow to be successful through preschool and kindergarten. Both groups understood the other’s suggestions and comments and having concrete instruments on which to base their findings helped clarify a state of kindergarten readiness for children. Preschool teachers appeared to have a greater knowledge about what is expected in kindergarten and they had a strong purpose in helping a child become ready for kindergarten. The quality of their knowledge may be due to the teachers who were willing to participate (i.e., more motivated and astute teachers self-selected to be part of this study) and their years of experience in early childhood education. The quality of experience and knowledge of the participants were evident within each focus group meeting.

A second important finding was that there were several objectives in which the kindergarten teachers scored a typical student lower than did a preschool teacher. There may be several reasons

for this: there is a possibility that both sets of teachers need more training in interrater reliability for scoring the instrument and another possibility could be the ‘summer slide’ which can contribute to a loss of learning from preschool to kindergarten. Another major contributor to this difference could be that preschool students typically are more successful with objectives because they have been exposed to a school environment before entering kindergarten. Across the focus groups, kindergarten teachers repeatedly asked, “are we talking about a child who has experienced a preschool experience, or a typical child?”. The panels let teachers rethink what their ideas and opinions about what is meant by a typically developing child versus one who had previous experience in school. In this scenario, preschool teachers would have higher expectations than the kindergarten teacher because she is introducing students to the objectives and their students are mastering these objectives. Kindergarten teachers, on the other hand, will receive many children that have not had preschool experience and have not yet mastered the objectives.

Third, kindergarten and preschool teachers agreed that some objectives were inappropriate from a developmental view for their students. They suggested they were too difficult for kindergarteners. Students seemed to need support in these objectives compared to others. The objectives with which they perceived that kindergarteners on day 60 seemed to have more difficulty were: “Manages Feelings,” “Responds to Emotional Cues,” “Attends and Engages,” “Tells About Another Place and Time,” and “Quantifies” (Burts et al., 2016). Both sets of teachers thought students might need more assistance and time with these in order to be successful on the 60th day. At the end of the study, there was significantly more agreement between the groups of teachers than anticipated on expectations concerning kindergarten readiness, and a clear understanding by the kindergarten teachers that assessment had to be approached differently for children who had not experienced preschool before attending kindergarten. A universal finding was that children who attended preschool were better ready for kindergarten than those who did not.

## CONCLUSION

The need for a widely accepted definition for “kindergarten readiness” has been needed for many years. This need has been heightened as the role of early childhood education has been elevated in importance and visibility within our social fabric of education in the United States of late. The transition into public education for young students can create a foundation that will help them become successful during their schooling and throughout their lives if a seamless transition can be established. A clear definition of kindergarten readiness should be one that is both deep and broad and considers the fits and starts of child development on a continuum as the key elements involved in a student’s transition to the kindergarten classroom are numerous and complex. The educational organizations involved in the transition process can surely work to refine the process of a student’s transition to public education whether it be from home or from preschool. However, this can be best accomplished by working together as a community to determine what makes a child successful in the kindergarten year.

As evident within this study, there are behavioral and academic skills that are distinct and can be defined on day 60 of kindergarten that can contribute to determining a child’s success within the kindergarten school year. In this study, both kindergarten and preschool teachers came together to form a consensus on those skills. It would be important for educators to adhere to these specific

skills that were noted and focus on those skills in preschool and especially during the first 60 days of kindergarten so students are able to progress successfully. In doing this, we help ensure success of a child's educational career not only in kindergarten, but likely later in life. This is the importance of defining kindergarten readiness.

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APPENDIX A:  
NCELI Objectives Scored at Day 60

Panel 1: Social-Emotional Domain

- 1a. Manages feelings
- 2b. Responds to emotional cues
- 2c. Interacts with peers

Panel 2: Social-Emotional Domain and Cognitive Domain

- 1b. Follows limits and expectations
- 3b. Solves social problems
- 11a. Attends and engages (cognitive domain)

Panel 3: Language Domain + Physical Domain

- 8b. Follows directions
- 9d. Tells about another place and time
- 7a. Uses fingers and hands

Panel 4: Literacy

- 15a. Notices rhyme and discriminates
- 15b. Notices and discriminated alliteration

Panel 5: Math

- 20a. Counts
- 20b. Quantifies
- 20c. Connects numerals with quantities

Panel 6: Modified Angoff Method to identify cut score for 14 progressions

