HS Dialog, 26(2),

ISSN: 1930-9325

RESEARCH ARTICLE

What are Convergence and Divergence in How Parents and Educators Interpret Child Development When Preschoolers Transition to Kindergarten?

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This study investigated the interrater agreement between parents of young children and the early childhood professionals working with their family as they transition from preschool to kindergarten. The goal of this research was to identify clusters of greatest congruence and divergence. We examined clusters of agreement between 24 parent and educator dyads from rural Head Start programs in the Midwest. Differences in parental and professional assessment are represented, as well as areas where there are strong convergence. Results draw attention to the items where parents and professionals have greatest difference in the assessment. This study has implications for co-production of services for children and their families with professionals.

Keywords: authentic assessment, rural preschool programs, Head Start, AEPS-3 Ready-Set, AEPS-3 Family Assessment of Child Skill, kindergarten, parental and professional congruency, co-production

INTRODUCTION

Parental engagement may occur in their child's instruction, curriculum, and/or assessment. COVID-19 and the global pandemic may have impacted parental involvement in their child's education (Daro, Gallagher, & Cunningham, 2022). A family-centered approach has been the favored model for young children with risk, delay, or disability since the inception of the Individuals with Disabilities Education Act (IDEA), especially in the case of infants, toddlers, and preschoolers (Bagnato, 2007; Bruder, 2000; DEC, 2014; Dunst, 2002).

Acknowledgement: We would like to thank the children, parents, Head Start teachers and administrators who participated in this study. We owe a gigantic thank you to Research Services Council of University of Nebraska who granted Macy and Reid a Research Diversity Seed Grant for this study.

Families of young children may need customized supports and services for optimal engagement (Cohen & Mosek, 2019; Gilliam, 2009; Grant & Isakson, 2013). Finding effective strategies and tools may lead to positive outcomes for young children (García-Grau, Martínez-Rico, McWilliam, & Cañadas Pérez, 2020; Shore, Shue, & Lambert, 2010). When parents and professionals work together on behalf of a young child, there is potential to address common goals and objectives (Jakobsen & Andersen, 2013; Ledger & Slade, 2015; Macy, Argus-Calvo, Torres Hernández, & Hernández Collazo, 2019; Mickelson, McCorkle, & Hoffman, 2022). Professionals and families can co-produce services because the family is very familiar with the child, and the professional is skilled at delivering services (Haumann, Güntürkün, Schons, & Wieseke, 2015). The current study explored a strategy for parents and early childhood educators to co-produce assessment activities when preschoolers transition to kindergarten. Specifically, we sought to learn more about families in rural settings who have a preschooler in Head Start.

Head Start programs represent a diverse group of children from different racial, cultural, and linguistic backgrounds. The national Head Start program started in 1965 under President Lyndon Johnson's *war on poverty* initiative to ameliorate the impact of economics on children and their families to level the playing field by creating a comprehensive program for early childhood education, health, and social services. Additionally, Head Start programs serve at least 10% of their children with diagnosed disabilities.

Authentic assessment allows professionals and parents a way to determine child development and learning in a natural way that uses observation and play to gather information about a child (Bagnato, 2007; de Sam Lazaro, 2017; Grisham-Brown, Hallam, & Brookshire, 2006; Hamre, 2014). One type of authentic assessment is: *Assessment, Evaluation, & Programming System* (AEPS; Bricker et al., 2022a). AEPS is an authentic measure that contains an assessment linked to an accompanying early childhood curriculum for children birth to age six.

AEPS measures child development via natural observations in familiar settings across multiple areas of development including the following 8 domains: adaptive, cognitive, fine motor, gross motor, literacy, math, social, and social communication. AEPS has a family report that allows parents to provide information about their children's strengths and needs. AEPS has a graduated scoring mechanism where a three-point rating scale contains 2, 1, and 0. Mastery is represented by a score of 2, an emerging skill is represented by a score of 1, and a skill that has not yet emerged is represented by a score of 0. AEPS is an initial assessment, or it can be an evaluation over time.

The specific problem of interest is the relationship between observers when parents of preschoolers are getting ready to transition to kindergarten and the context of collaborating with the Head Start teacher to assess child development and learning is not well understood. The purpose of our study was to better understand the congruency between professionals and parents when assessing preschoolers. Differences in evaluation of a child between their parent and the professional working with them and their family was examined. Our primary research question was: What is the inter-rater agreement between professionals and parents?

METHOD

This mixed method study is comprised of both quantitative and qualitative methodology. To address the primary research question, we designed a study to explore parental and professional assessments of preschoolers enrolled in rural Head Start programs. Participants, procedures, instruments, and data analysis are described next.

Participants

Participants in this study were: Head Start teachers from rural area(s) of the Midwestern part of the United States, preschool children, and parents of preschoolers attending Head Start. A total of 16 Head Start teachers and 24 parents of preschoolers participated in the study. Teachers worked in inclusive rural Head Start settings. Family members had a child who was a preschooler at the time of the study (i.e., spring 2022), and would be going to kindergarten the following year in the fall.

Teachers. A demographic form was completed by all the teachers where all participants identified as female. Teachers averaged approximately 17 years of experience working with young children and families (range was 1 to 40 years). Teachers averaged approximately 7 years of experience with teaching in Head Start (range was new to 24 years with Head Start). For level of education, the majority of Head Start teachers held an Associate and/or Bachelor's degree. The most common major was Early Childhood Education. Additionally, teachers majored in these areas: Business Administration, Criminal Justice, Elementary Education, Family Studies, Graphic Design, Organizational Communication, Psychology, and Sociology. The majority of Head Start teachers indicated that their coursework or training was related to working with preschool (75% of all teachers indicated most or half of the coursework was with preschool age, 19% indicated some, and 6% indicated none). Selected demographic information for teacher participants are reported in Table 1.

Table 1

Rural Head Start Educator Demographics (N = 16)

Factors	*n*	*%*
Ethnicity		
African American	-	-
Asian/Pacific Islander	-	-
Caucasian (Non-Hispanic)	14	88
Latino or Hispanic	1	6
Native American/Aleut	1	6
Other	-	-
Age		
20-30	1	6

30-40	5	31
40-50	4	25
Over 50	6	38
Did not answer		
Educational Background		
High School	1	6
Some college/CDA	4	25
AA degree	1	6
Bachelor's degree	10	63
Graduate degree and above	-	-
Skill level with assessment		
Very low	-	-
Low	1	6
High	8	50
Very high	7	44

Families and Children. A total of 24 family members participated in this study with their child who was enrolled in a rural Head Start program in the Midwestern part of the United States. Most of the participants who completed the *AEPS-3 Family Assessment of Child Skills* (FACS) were mothers (*n* = 21/24, 87.5%), and some grandmothers (*n* = 3/24, 12.5%). Most family participants reported a family income of less than $50K.

The study focused on 24 preschool children who attended a rural Head Start program. The average child age was 62.5 months (range was 55 to 68 months of age). The majority of children did not have a history or diagnosis of developmental delay (*n* = 14; 58%) or receive special services (*n* = 19; 79%). However, there were seven children, of the 24 in the group, who did have a history or diagnosis of developmental delay/disability (*n* = 7; 29%), or receive special services (*n* = 5; 21%). This percentage of 29% of children in Head Start is far above the 10% federal policy requirement for inclusion. Also, it is interesting that 2 of the parents who indicated their child had an identified delay/disability also reported their child did not receive special services for their diagnosis. This could be because they were newly identified with a delay/disability prior to transitioning to kindergarten.

Written materials for families were available in Spanish and English. Five children's home language is Spanish (21%). Materials (i.e., consent form and demographic form) were translated into Spanish by the Head Start program, as well as *AEPS-3 FACS* was published into Spanish by the AEPS publisher. The ethnicity composition was 50% Non-Hispanic Caucasian, 46% Latino or Hispanic, and 4% not reported. Table 2 shows the demographic data for teacher, child and family (on next page).

Table 2

Children and their Family Demographics (N= 24)

Factors	*n*	%
Ethnicity (children)		
African American	-	-
Asian/Pacific Islander	-	-
Caucasian (Non-Hispanic)	12	50
Latino or Hispanic	11	46
Native American/Aleut	-	-
Did not answer	1	4
Gender		
Female	10	42
Male	14	58
Developmental status		
No history or indication of developmental delay	14	58
Suspected developmental delay or disability	-	-
Identified delay or disability	7	29
Did not answer	3	13
Receives special services		
Yes	5	21
No	19	79
Did not answer	-	-
If yes, what type? Speech therapy (*n* = 2 reported by parents)		
Family Income		
Below $10K	3	12.5
$10-50K	11	45.8
$50-100K	5	20.8
Did not answer	5	20.8

PROCEDURES

Recruitment

The university Institutional Review Board granted approval for the study. Researcher(s) contacted directors/principals of Head Start to invite participation in the study. The study purpose and procedures were explained, and permission requested to recruit from program classrooms. Interested teachers were contacted by researcher(s) and those who are eligible to participate in the study (i.e., have preschool-age children who were scheduled to enter kindergarten next year in

their classes) were given a consent form to review and sign. Researchers provided teachers consent form to send home to parents of eligible children in their classroom. Parents who agreed to participate in the study signed letter of informed consent and return to the researcher(s).

Teachers were recruited from the Head Start programs in rural communities in the Midwestern part of the United States. Teachers' participation was voluntary. Parents were recruited from the Head Start teachers who sent a letter home to families about the study.

Training. Teachers received a 2-hour training session on use of the *AEPS-3 Ready-Set* and parental use of the *AEPS-3 FACS*. Participating teachers became familiar with observing children and using *AEPS-3 Ready-Set* with presentation of assessment content, case study discussion, and assessment role play and hands-on practice. A $25 gift card for 24 participants to a nationwide retailer was provided the Head Start programs for teacher participation in the training.

Data Collection. Teachers were given a hard copy and an electronic copy of the *AEPS-3 Ready Set* protocol to use for completing the assessment, and a hard and electronic copies of a parent packet that included the *AEPS-3 FACS* protocol and demographic form for families. Teachers completed the *AEPS-3 Ready Set* and collected the parent packet. All protocols and packets were picked up from the school by the researcher(s). Teachers received a $20 gift card for each *AEPS-3 Ready Set* protocol they completed. Parents received a $15 gift card for each *AEPS-3 FACS* completed.

Measure/Instrument

This study used an authentic and curriculum-based assessment called the *Assessment, Evaluation, & Programming System* (AEPS-3; Bricker et al., 2022). *AEPS-3* measures child development via natural observations in familiar settings across 8 areas of development including: adaptive, cognitive, fine motor, gross motor, literacy, math, social, and social communication. *AEPS-3* has a graduated scoring mechanism where a three-point rating scale contains 2, 1, and 0. Mastery is represented by a score of 2, an emerging skill is represented by a score of 1, and a skill that has not yet emerged is represented by a score of 0. *AEPS-3* is an initial assessment, or it can be an evaluation over time. The third edition of the *AEPS* has two new components that were examined in this study the: *AEPS-3 Ready Set* and the *AEPS-3 Family Assessment of Child Skills (FACS)* that are described next.

AEPS-3 Ready Set. One of the new components of the third edition is the *AEPS-3 Ready Set* which is a new tool that focuses on assessing the kindergarten readiness skills of children whose developmental age are between four to six years. *AEPS-3 Ready Set* has 40 items that are extracted from the *AEPS-3*: Two are in *fine motor* area (5%), three are in *gross motor* area (8%), two are in *adaptive* area (5%), eight items are in *social emotional* area (20%), three items are in *social communication* area (7%), six items are in *cognitive* area (15%), ten items are in *literacy* area (25%), and six items are in *math* area (15%). Social emotional, cognitive, literacy and math areas have more items that address many skills children will encounter in a kindergarten context. Based

on the skills that children likely possess when entering kindergarten, these items were selected and reviewed by a panel of experts who specialized in child development and early childhood assessments. *AEPS-3 Ready Set* uses a graduated scoring option to show where a child is at in mastering a skill (i.e., skill is mastered gets a 2, skill that is emerging gets a 1, and a skill that has not yet started gets a 0). Emerging skills (i.e., score of 1) can be further explained using "A" for assistance, or "I" for incomplete. Raw scores are totaled and are converted into a percentage to show a child's progress in kindergarten related skills across different domains.

AEPS-3 Family Assessment of Child Skills (FACS) of Ready Set. The other new component of the third edition of the *AEPS* is the *Family Assessment of Child Skills (FACS)*. The purpose of *AEPS-3 FACS* is for parents/family members to provide input into the assessment of their children's kindergarten related skills. *AEPS-3 FACS* contains a demographic form that asks basic family information (e.g., name and address, contact information language is spoken at home), a page that describes that purpose of *AEPS-3 FACS* and provides scoring instructions; items that measures child's kindergarten readiness skills, and sections for recording family concerns and priorities for instruction/intervention. Families and professionals may use *AEPS-3 FACS* to identify skills and needs of children, set goals, and monitor progress. *AEPS-3 FACS* has 30 items that corresponded to the items on the *AEPS-3 Ready Set*, except two items in the social emotional area, one item in social-communication area, three items in literacy area, and two items in math area. *AEPS-3 FACS* items are written in family friendly language. For example, on the *AEPS-3 Ready Set*, the first item on fine motor skill is written as "Manipulates object with two hands, each performing different action", whereas on the *AEPS-3 FACS*, this item is written as "Does your child use two hands to move or manipulate objects using each hand separately or independently? For example, your child strings beads on a shoelace, buttons small buttons, or threads and zips a zipper."

In *AEPS-3 FACS*, each area begins with a definition of the domain, followed by the items. Some items contain an illustration that accompanies the skill. A 3-point rating scale (Yes, Sometimes, and Not Yet) is used for parents to score the items based on their observations of their children. If parent(s) are not able to observe the skill being assessed, parents can select "Cannot Observe". *AEPS-3 Ready Set* assessment and *AEPS-3 FACS* can be used together or separately. For example, *AEPS-3 Ready Set* and *AEPS-3 FACS* could be used in tandem to facilitate parent teacher conferences.

AEPS-3 FACS has open ended sections after each domain that asks parents what they would like for their children. It also has a section at the end of the *AEPS-3 FACS* after parents have completed each domain that asks them what they would like for intervention priorities.

Demographic Information Forms. Teacher and parent participants completed separate demographic forms. Teachers provided information about gender and age, experience, educational attainment, coursework, and assessment skill level. Parents shared information about their child's gender, ethnicity/race, developmental status, special services received, as well as family income and marital status in the family demographic form.

Data Analysis

The *AEPS-3 Ready Set*, *AEPS-3 FACS*, and demographic information were instruments used to better understand the research question. Two independent observations (i.e., parents and professionals) were recorded of the child's performance across 8 domains (i.e., adaptive, cognitive, fine motor, gross motor, social emotional, social communication, reading and math). Inter-rater reliability between professionals and parents was measured by examining the development of twenty-four children. Agreement between raters across total raw score and developmental domains were calculated using a correlation coefficient.

RESULTS

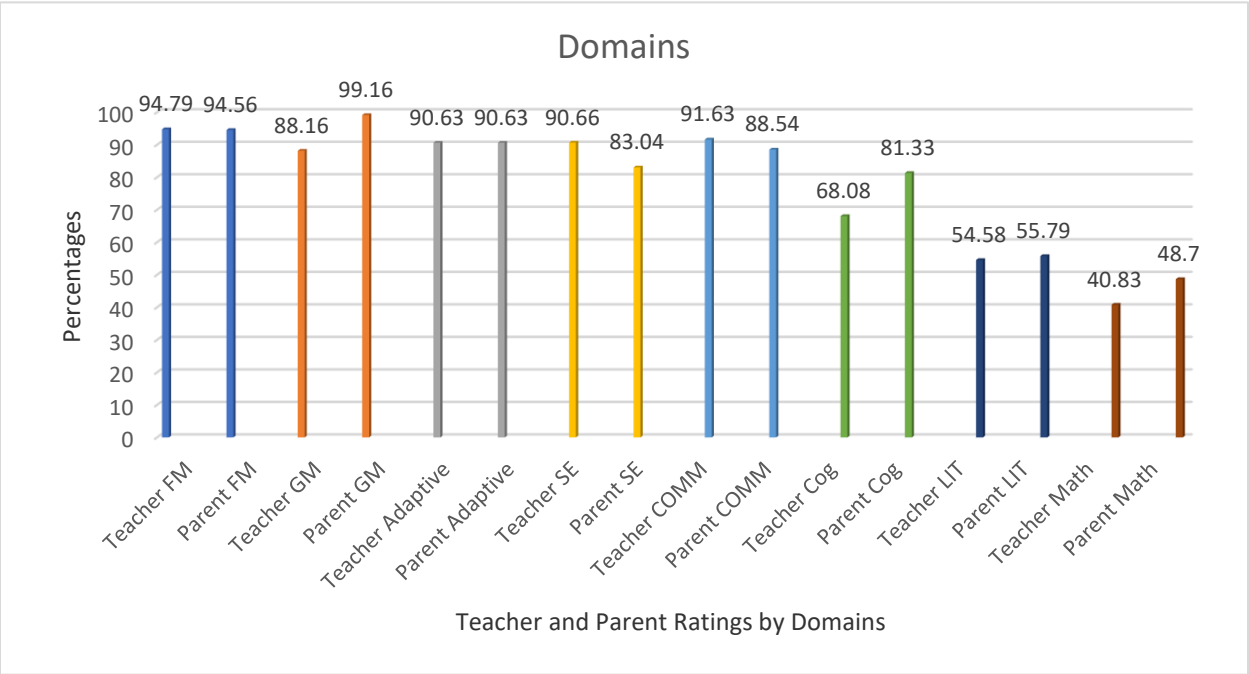
Parents/grandparents and teachers observed 24 children using two versions of the *AEPS-3*. Results are reported for the dyads showing their assessments of preschool children in the springtime before they transitioned to kindergarten. First, we report demographic information for participants. Second, we share overall agreement between parents and teachers and then by domains. Last, we report qualitative data collected from parents about what they would like for their children when they answered open-ended questions from the *AEPS-3 FACS*.

Overall Basic Agreement Between Parents and Professionals

Two independent observations of the child's overall development and academics (i.e., reading and math) were recorded. Agreement across 8 developmental domains are shown in Figure 1 with overall ratings of child development and learning.

Figure 1

Teacher and Parent Congruence on Eight Child Developmental Domains Mean Scores



Next we discuss children's development by domains. The following domains are: adaptive, cognitive, fine motor, gross motor, social emotional, social communication, literacy and math. Moderate to strong correlations indicate a degree of moderate to strong agreement between the raters. Corresponding data tables of each basic agreement analysis are displayed in pages 11-16.

Basic Agreement on Adaptive Skills. Means for items from the adaptive areas of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.36 to 1.92 (based on the AEPS-3 rating scale of 0-2.00). Adaptive item 1 from the *AEPS-3 Ready Set* had a statistically significant correlation with item 2 from the *AEPS-3 Ready Set*. Adaptive item 2 from the *AEPS-3 FACS* had a statistically significant correlation with both items from the Adaptive *AEPS-3 Ready Set*. Teachers and parents had strong positive correlation when scoring the *AEPS-3 Ready Set* for the Teacher item 1 with Parent item 2 and moderate positive correlation when scoring Teacher item 2 with Parent item 2. Table 3 shows Pearson correlations for adaptive domain.

Basic Agreement on Cognitive Skills. The Means for items from the cognitive areas of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.08 to 1.83 (based on the *AEPS-3* rating scale of 0-2.00). There was moderate to strong positive correlation between the Teachers and Parents rating on most items. Table 4 shows Pearson correlations for cognitive domain.

Basic Agreement on Fine Motor Skills. Means for items from the fine motor areas of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.83 to 1.96 (based on the *AEPS-3* rating scale of 0-2.00). Fine motor item 1 did not have a statistically significant correlation between teacher and parent. Fine motor item 2 did have a statistically significant moderate positive correlation between teacher and parent. Table 5 shows Pearson correlations for fine motor domain.

Basic Agreement on Gross Motor Skills. Means for items from the gross motor areas of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.43 to 2.00 (based on the *AEPS-3* rating scale of 0, 1, and 2s). This was the only domain where parents and professionals had perfect agreement on an item. The first item of the *AEPS-3 Ready Set* and *AEPS-3 FACS* for gross motor shows that all of the teachers and all of the parents completely agreed that their child had mastered the skill of jumping forward (criterion: child jumps forward with both feet together and off surface and lands on both feet without falling). Gross motor item 2 from the *AEPS-3 Ready Set* had a statistically significant moderate positive correlation with gross motor item 2 from the *AEPS-3 FACS*. Item 3 had a statistically significant strong positive correlation between the teacher and parent. Table 6 shows Pearson correlations for gross motor domain.

Basic Agreement on Social Emotional Skills. Means for items from the social emotional areas of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.21 to 1.96 (based on the *AEPS-3* rating scale of 0-2.00). Social emotional items from the *AEPS-3 Ready Set* had a statistically significant moderate to strong positive correlation with social emotional items from both the *AEPS-3 Ready Set* and *AEPS-3 FACS* across most items. Table 7 shows Pearson correlations for social emotional domain.

Basic Agreement on Social Communication Skills. Means for items from the social communication domain of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from 1.71 to 1.96 (based on the *AEPS-3* rating scale of 0-2.00). There were no statistically significant correlations

between the teacher and parent scoring of the items for social communication. Table 8 shows Pearson correlations for social communication domain.

Basic Agreement on Reading Skills. The Means for items from the literacy domain of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from .25 to 1.83 (based on the *AEPS-3* rating scale of 0-2.00). Several literacy items from the *AEPS-3 Ready Set* had a statistically significant moderate to strong positive correlation within the same measure as well as between the teacher and parent. Table 9 shows Pearson correlations for literacy domain.

Basic Agreement on Math Skills. Means for items from the math domain of the *AEPS-3 Ready Set* and *AEPS-3 FACS* ranged from .13 to 1.54 (based on the *AEPS-3* rating scale of 0-2.00). Most math items had a statistically significant moderate to strong positive correlation between the teacher and parent. Table 10 shows Pearson correlations for math domain.

Table 3

Adaptive Means, Standard Deviations, and Pearson Correlations for the AEPS3 Ready Set and AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4
AEPS-3 Ready Set (TEACHER) - Adaptive						
1. Adaptive Ready Set 1 (*n*=24)	1.92	.282	---			
2. Adaptive Ready Set 2 (*n*=24)	1.71	.464	.470*	---		
AEPS-3 FACS (PARENT) - Adaptive						
3. Adaptive FACS 1 (*n*=24)	1.88	.338	.342	.312	---	
4. Adaptive FACS 2 (*n*=24)	1.36	.482	.853**	.551**	.401	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed).

Table 4

Cognitive Means, Standard Deviations, and Pearson Correlations for the AEPS3 Ready Set and AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
AEPS-3 Ready Set (TEACHER) – Cognitive (*n* =24 for #1-6)												
1. Cognitive Ready Set 1	1.50	.511	---									
2. Cognitive Ready Set 2	1.46	.658	.582**	---								
3. Cognitive Ready Set 3	1.33	.637	.535**	.449*	---							
4. Cognitive Ready Set 4	1.42	.504	.845**	.711**	.632**	---						
5. Cognitive Ready Set 5	1.08	.654	.391	.413*	.348	.418*	---					
6. Cognitive Ready Set 6	1.42	.504	.676**	.448*	.768**	.829**	.550**	---				
AEPS-3 FACS (PARENT) – Cognitive (*n*= 23 for #7; *n*= 24 for 8, 9, 10)												
7. Cognitive FACS 1	1.83	.388	.439*	.485*	.594*	.368	.061	.368	---			
8. Cognitive FACS 2	1.58	.654	.391	.665**	.244	.418*	.186	.286	.577**	---		
9. Cognitive FACS 3	1.54	.588	.217	.566**	.193	.379	.217	.232	.450*	.612**	---	
10. Cognitive FACS 4	1.63	.576	.517*	.818*	.474*	.562**	.202	.412*	.691**	.606**	.497*	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed).

Table 5

Fine Motor Means, Standard Deviations, and Pearson Correlations for the AEPS3 Ready Set and AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4
AEPS-3 Ready Set (TEACHER) – Fine Motor						
1. Fine motor Ready Set item 1 (*n*=24)	1.83	.381	---			
2. Fine motor Ready Set item 2 (*n*=24)	1.96	.204	-.093	---		
AEPS-3 FACS (PARENT) – Fine Motor						
3. Fine motor FACS item 1 (*n*=23)	1.91	.288	.265	-.066	---	
4. Fine motor FACS item 2 (*n*=23)	1.87	.344	.163	.550**	.797**	---

Note. * indicates the correlation was significant at the 0.01 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed)

Table 6

Gross Motor Means, Standard Deviations, and Pearson Correlations for AEPS3 Ready Set & AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5	6
AEPS-3 Ready Set (TEACHER) – Gross Motor								
1. Gross motor Ready Set item 1	2.00	.000	---					
2. Gross motor Ready Set item 2	1.67	.702	C	---				
3. Gross motor Ready Set item 3	1.63	.711	C	. 087	---			
AEPS-3 FACS (PARENT) – Gross Motor								
4. Gross motor FACS item 1	2.00	.000	C	C	C	---		
5. Gross motor FACS item 2	1.43	.788	C	.766**	.073	C	---	
6. Gross motor FACS item 3	1.83	.576	C	.288	.484*	C	.174	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed).
C = cannot compute because at least one of the variables is constant.

Table 7

Social Emotional Means, Standard Deviations, and Pearson Correlations for AEPS3 Ready Set & AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
AEPS-3 Ready Set (TEACHER) – Social Emotional																
1. Social Emotional Ready Set 1	1.83	.381	---													
2. Social Emotional Ready Set 2	1.88	.338	.507*	---												
3. Social Emotional Ready Set 3	1.88	.338	.507*	1.00**	---											
4. Social Emotional Ready Set 4	1.92	.282	.674**	.342	.342	---										
5. Social Emotional Ready Set 5	1.50	.511	.447*	.378	.378	.302	---									
6. Social Emotional Ready Set 6	1.96	.204	-.093	-.079	-.079	-.063	.209	---								
7. Social Emotional Ready Set 7	1.79	.415	.596*	.737**	.737**	.588**	.513*	-.107	---							
8. Social Emotional Ready Set 8	1.75	.532	.430*	.061	. 061	.435*	.480*	.301	.542**	---						
AEPS-3 FACS (PARENT) – Social Emotional																
9. Social Emotional FACS 1	1.83	.381	.400	.845**	.845**	.270	.447*	-.093	.596**	.000	---					
10. Social Emotional FACS 2	1.88	.338	.507*	.619**	.619**	.342	.378	-.079	.427*	.303	.507*	---				
11. Social Emotional FACS 3	1.21	.658	.145	.513*	.513*	.098	.194	.067	.325	.155	.492*	.513*	----			
12. Social Emotional FACS 4	1.79	.509	.262	.853**	.853**	.176	.251	-.087	.609**	-.040	.711**	.601**	.525**	---		
13. Social Emotional FACS 5	1.71	.550	.381	.497*	.497*	.397	.077	-.113	.484*	.037	.381	.263	.175	.395	----	
14. Social Emotional FACS 6	1.54	.588	.032	.356	.356	-.240	.217	.196	.126	-.104	.421*	.356	.257	.057	.257	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed).

Table 8

Social Communication Means, Standard Deviations, and Pearson Correlations for AEPS3 Ready Set & AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5
AEPS-3 Ready Set (TEACHER) – Social Communication							
1. Social Communication Ready Set 1	1.96	.204	---				
2. Social Communication Ready Set 2	1.83	.381	.466*	---			
3. Social Communication Ready Set 3	1.71	.464	.325	.451*	---		
AEPS-3 FACS (PARENT) – Social Communication							
4. Social Communication FACS 1	1.83	.381	-.093	.100	-.041	---	
5. Social Communication FACS 2	1.71	.464	.325	.205	-.008	.451*	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).
**indicates the correlation was significant at the 0.01 level (2-tailed).

Table 9

Literacy Means, Standard Deviations, and Pearson Correlations for AEPS3 Ready Set & AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AEPS-3 Ready Set (TEACHER) - Literacy																			
1. Literacy Ready Set 1	1.25	.737	---																
2. Literacy Ready Set 2	.25	.532	.388	---															
3. Literacy Ready Set 3	.33	.637	.278	.642**	---														
4. Literacy Ready Set 4	.50	.834	.636**	.196	.000	---													
5. Literacy Ready Set 5	1.21	.779	.511*	.184	.292	.301	---												
6. Literacy Ready Set 6	.71	.806	.494*	.177	-.226	.808**	.239	---											
7. Literacy Ready Set 7	1.83	.381	.465*	.215	.239	.274	.415*	.401	---										
8. Literacy Ready Set 8	1.33	.482	.735**	.340	.189	.866**	.270	.597**	.316	---									
9. Literacy Ready Set 9	1.71	.550	.509*	-.037	.041	.237	.249	-.004	.173	.219	---								
10. Literacy Ready Set 10	1.79	.509	.492*	.201	.223	.256	.334	.057	.037	.296	.550**	---							
AEPS-3 FACS (PARENT) - Literacy																			
11. Literacy FACS 1	1.04	.806	.640**	.279	.141	.549**	.332	.421*	.448*	.634**	.421*	.552**	---						
12. Literacy FACS 2	.63	.770	.249	.027	.177	.373	.354	.236	.223	.235	.449*	.347	.306	---					
13. Literacy FACS 3	.63	.711	.436*	-.086	-.192	.623**	.383	.559**	.402	.381	.486*	.255	.408*	.685**	---				
14. Literacy FACS 4	.71	.806	.201	.076	.113	.162	.516**	.265	.401	.149	.192	.375	.354	.517**	.483*	---			
15. Literacy FACS 5	1.65	.714	.492*	.128	.077	.239	.769**	.308	.593**	.233	.178	.278	.479*	.315	.429*	.431*	---		
16. Literacy FACS 6	1.50	.722	.327	.226	.189	.072	.348	.187	.632**	.125	.164	.177	.336	.196	.296	.485*	.595**		
17. Literacy FACS 7	1.71	.624	.543**	.229	.255	.292	.578**	.342	.335	.338	.121	.074	.198	.215	.135	.256	.769**	.338	

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).

**indicates the correlation was significant at the 0.01 level (2-tailed).

Table 10

Math Means, Standard Deviations, and Pearson Correlations for AEPS3 Ready Set & AEPS3 FACS

Variables (items)	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
AEPS-3 Ready Set (TEACHER) - Math												
1. Math Ready Set 1	.88	.850	---									
2. Math Ready Set 2	1.54	.658	.359	---								
3. Math Ready Set 3	1.21	.833	.407*	.658**	---							
4. Math Ready Set 4	1.00	.780	.524**	.593**	.870**	---						
5. Math Ready Set 5	.13	.448	.271	.203	.276	.373	---					
6. Math Ready Set 6	.13	.448	.271	.203	.276	.373	1	---				
AEPS-3 FACS (PARENT) - Math												
7. Math FACS 1	1.14	.834	.150	.457*	.515*	.529*	-.304	-.304	---			
8. Math FACS 2	1.35	.775	.205	.690**	.535**	.561**	.183	.183	.663**	---		
9. Math FACS 3	.96	.928	.162	.554**	.773**	.699**	.245	.245	.679**	.654**	---	
10. Math FACS 4	.65	.647	.077	.546**	.707**	.609**	.454*	.454*	.438*	.614**	.806**	---

Note. * indicates the correlation was significant at the 0.05 level (2-tailed).

**indicates the correlation was significant at the 0.01 level (2-tailed).

Parental Responses to Open-ended Questions

On the *AEPS-3 FACS*, parents provided information about what they would like for their children by domain and overall. The qualitative data collected from parents was obtained from open-ended questions from the *AEPS-3 FACS*. Parental hopes for their children are described next.

What Parents Want for their Children – Adaptive Skills. A total of three parents provided written responses in the open-ended section of the adaptive domain. One parent said she would like her child to be able to tie shoes. Another parent wrote: "To be less social, she's quite the little butterfly and loves to talk. It often concerns me when she is out with me how easy it is to talk to strangers even though we have had that talk." A parent wrote that she would like her child to: look both ways, watch step, and better self-care personal hygiene.

What Parents Want for their Children – Cognitive Skills. A total of five parents provided written responses in the open-ended section of the cognitive domain. Their comments were: (Parent 1) I would like to do more experiments to help widen & expand her ideas & mind; (Parent 2) Continue to work on problem solving and categorizing; (Parent 3) Understanding perception/opinion; (Parent 4) Work on solving problems through frustration; (Parent 5) Reconocer las letras del A, B, C y los numeros (recognize letters of the alphabet and numbers).

What Parents Want for their Children – Fine Motor Skills. A total of eight parents provided written responses in the open-ended section of the fine motor domain. Here are parental responses: (Parent 1) To write or draw with both hands; (Parent 2) How to tie her shoes; (Parent 3) I want my child to learn how to tie his shoes; (Parent 4) Pincer grasp. Applying pressure to writing tool; (Parent 5) Escribir bien (write well); (Parent 6) Hand eye coordination; (Parent 7) Tie her shoes; (Parent 8) Escribir los numeros y letras (write numbers and letters).

What Parents Want for their Children – Gross Motor Skills. A total of six parents provided written responses in the open-ended section of the gross motor domain. Here are parental responses to open-ended question: (Parent 1) To learn to jump rope; (Parent 2) Ride a bike without training wheels, jump rope, skipping; (Parent 3) Skipping. Alternating feet when climbing stairs. Pedaling bike. Overhand throws; (Parent 4) Riding a bike, not being scared of it; (Parent 5) Omolar en Bicicleta. (ride bike); (Parent 6) Skipping.

What Parents Want for their Children – Social Emotional Skills. A total of eight parents provided written responses in the open-ended section of the social emotional domain. Parental responses included: (Parent 1) She knows her full name, but I would like to work on her address, phone number, and city; (Parent 2) She needs to learn more personal information (address); (Parent 3) I want my child to learn our home address; (Parent 4) Learn phone number and address. To better advocate for self when playing with others; (Parent 5) Aprender su direccion y numero de telefonon (learn directions and telephone number); (Parent 6) Phone # and address; (Parent 7) Work on listening in public; (Parent 8) Direcion, numero de telefono (directions and telephone number).

What Parents Want for their Children – Social Communication Skills. A total of six parents provided written responses in the open-ended section of the communication domain. Parents

responded with the following comments: (Parent 1) To be more precise and exact; (Parent 2) I want my child to describe where he lives; (Parent 3) Understanding conversational rules. Turn taking in conversation. Being more patient waiting for a response; (Parent 4) To communicate with other kids; (Parent 5) Stranger and not a stranger difference; (Parent 6) Learn to communicate while angry.

What Parents Want for their Children – Literacy Skills. A total of seven parents provided written responses in the open-ended section of the literacy domain. Parental responses were: (Parent 1) I would like her to continue to break down words & continue to practice reading; (Parent 2) Continue to work on writing letters, matching sounds; (Parent 3) I want my child to correctly spell his full name; (Parent 4) Recognizing and writing letters and words. Matching sounds and letters; (Parent 5) He is working on speech. J has issues talking; (Parent 6) Work on rhyming; (Parent 7) Escribir y dibujar los letras y numeros (write and draw letters and numbers).

What Parents Want for their Children - Math Skills. A total of ten parents provided written responses in the open-ended section of the math domain. Of the eight domains, this math domain had the most comments by parents which include the following: (Parent 1) Work on learning bigger numbers; (Parent 2) Needs to work on counting; (Parent 3) Work on counting skills - sometimes she struggles with a certain number; (Parent 4) I want my child to learn the "10s" so he can correctly count to 100; (Parent 5) 1. Writing and reading more numbers; 2. Writing words; (Parent 6) Recognizing and writing numbers; (Parent 7) Los numeros.(Parent 8) 11-20 needed work on. All number needed to be more written or to be able to know all of them when written down; (Parent 9) Continue to learn numbers; (Parent 10) Contor y reconocer los numeros (know and recognize numbers).

Overall Intervention Priorities Parents Want For Their Children

A total of 17 parents provided written responses in the open-ended section for: Intervention Priorities. The directions were: “Please list the next skills you would like your child to learn.” Parental comments are displayed in table 11:

Table 11

Parent	Response
1	Learn math better
2	Tie shoes
3	1. I would like my child to learn how to tie his shoes 2. I would like my child to learn how to dial 911 on a cell phone 3. I would like my child to learn my cell phone number 4. I would like my child to learn/memorize our home address
4	1. Recognizing and writing letters 2. Recognizing and writing numbers 3. Pincer grasp 4. Alternating steps/stepping
5	To learn how to write more, talking skills, how to learn sentences
6	1. Lear un libre (read a book)

	2. Esbribir (write) 3. Pintar bonito (paint pretty) 4. Tener muchos amigos (have lots of friends)
7	1. Knowing left and right 2. phone #, address, full names 3. Tying shoes, riding bike with training wheels 4. Writing numbers and letters better
8	J needs help talking
9	1. Tie shoes 2. Recognize more letters 3. Last name
10	1. More letters 2. Counting higher 3. Letter sounds
11	Counting, language, and writing
12	1. Write name 2. Know more letters 3. Count higher 4. Identify numbers
13	Count higher, know more letters, writing
14	Talking about emotions, being more patient, listen to directions the first time, tying shoes
15	Write all alphabet
16	Escribir y reconocer los numeros (write and recognize numbers). Escribir y reconocer las letras (write and recognize letters). Aprenda a socializar mas con sus cmpaneritos y maestras (learn and social with friends and teachers).
17	1. To learn more Spanish 2. To learn to write her last name 3. Clearly enunciate with her vocabulary & not my words 4. To write out all letters and numbers 5. To put sounds together to be able to read 6. To learn bigger numbers 7. Continue with science 8. Make more art and mix colors 9. Better colorings/more inside the lines 10. Cut in straight lines 11. Pick out her own clothes and get dressed by herself 12. Clean and organize on her own by sorting 13. Skipping

DISCUSSION

The current study explored child development and used perceptions from two raters familiar with a child to rate their performance on skills in the literacy, math, adaptive, cognitive, social, social communication, fine and gross motor domains. We examined the relationship between parent report and the child's tested performance rated by a professional. Studies have explored evaluators of children and their development (Macy et al., 2018; Lambert et al., 2021), however, this exploratory study is the first to examine the reliability of the *AEPS-3 Ready Set* with parents of children in Head Start settings and their teachers. Two other studies on the *AEPS-3 Ready Set* have

been conducted. One of the *AEPS-3 Ready Set* studies was with Montessori children, teachers, and parents in Idaho and Florida (Macy et al., 2022). Another *AEPS-3 Ready Set* study was conducted with kindergarten teachers in Kentucky (Stevenson, 2019).

Reliability relates to accuracy of measurement. There are many types of reliability studies and our study focused on inter-rater reliability, or the degree to which a tool can be used to accurately assess a child's development when two different raters observe the child's skills. Inter-rater reliability is important in describing psychometric properties of an assessment because when there is a high level of agreement between two independent observers it may indicate that assessment items are written and administered in a manner that independent observers can agree upon a child's performance as having met a set of criteria or did not meet criteria.

Where is there convergence and divergence between parents and professionals?

Social connections for professionals are important indicators of wellness (Gallagher & Roberts, 2022; Roberts, Gallagher, Daro, Iruka, & Sarver, 2019). Children benefit when professionals and parents work in concert. Parental engagement in the assessment process can support child development. In a study by Crais, Roy, and Free (2006) parents and professionals both rated ideal and actual child-centered assessment practices high, however there was a gap between their views on implementation of assessment. In their study actual and ideal implementation of assessment practices varied between parents and professionals. Families benefit when there is a clear understanding about services and roles to co-produce services for children.

Respect for family wishes, concerns, and priorities, as well as role clarity can lead to positive results. Co-production in an early childhood educational context may include, but is not limited to: instruction, intervention, home visits (e.g., face-to-face and/or virtual), goal and curriculum development and/or implementation, and progress monitoring. Assessment is one type of co-production that could be used when parents and professionals work in partnership.

The parents and professionals in the current study had several areas of convergence and some divergence that we used correlations to examine eight domains. Correlation shows the relationship between 2 variables. Correlation values greater than .40 is an indication of moderate relationship, and values greater than .60 are an indication of a strong relationship. P value indicates the statistical significance of the relationship.

Adaptive. There was a moderate to strong correlation between adaptive items on the *AEPS-3 Ready Set* and *AEPS-3 FACS* when scored by parents and teachers. All *AEPS-3* scores were positive for the *AEPS-3 Ready Set* and *AEPS-3 FACS*. As scores increase for one *AEPS-3* measure, they also increase for the other measure. Dining and safety were the two constructs that were measured in the adaptive area. These adaptive skills are areas that are important for children. If a child did not have formal preschool, the kindergarten program might benefit by measuring these two constructs (i.e., dining and safety) and could use these two *AEPS-3* measures that have strong correlation.

Cognitive. Parents and Teachers observed cognitive items with a moderate to strong correlation on the *AEPS-3 Ready Set* and *AEPS-3 FACS* with several items that were statistically significant. All *AEPS-3* scores were positive for the *AEPS-3 Ready Set* and *AEPS-3 FACS*. Many items in the cognitive area were new in the *AEPS-3*, especially in scientific discovery. Future research studies could examine the qualitative scoring notes on the *AEPS-3* with special emphasis on the "A" and "I" scoring option that is associated with a score of "1" which is a new feature of the third edition.

Fine Motor. There was a moderate to strong correlation between fine motor items on the *AEPS-3 Ready Set* and *AEPS-3 FACS* when scored by parents and teachers. *AEPS-3 FACS* item 2 is statistically significant with both *AEPS-3 Ready Set* items. *AEPS-3 FACS* item 2 is also the only item of the four items in this area that has a picture of the task (i.e., child is hand holding a pencil using a three-finger grasp). This might be a helpful way to visually demonstrate the task. Many skills in kindergarten require children using their eye hand coordination to accomplish tasks, however assessments in kindergarten tend to be more academic and less developmental. Professionals and parents who are using both measures together to assess preschoolers include implications for impactful collaborations between home and preschool as children transition to kindergarten settings.

Gross Motor. There was a moderate to strong correlation between gross motor items on the *AEPS-3 Ready Set* and *AEPS-3 FACS*. Gross motor *AEPS-3 FACS* item 1 was about jumping with a picture of child jumping and strongly correlated with the *AEPS-3 Ready Set* jump item. Skipping and hanging from play equipment were also statistically significant. Physical play is an important part of development which can sometimes get overlooked in kindergarten settings with less time to play in the kindergarten classroom compared with preschool. This study focused on preschool children, however a study done by Stevenson (2019) with the *AEPS-3 Ready Set* was with school districts in Kentucky who used the measure for kindergarten classrooms. Her findings add to this research showing how kindergarten teachers can use *AEPS-3 Ready Set* to measure developmental skills in kindergarten.

Social Emotional. There were moderate to strong correlations between items on the *AEPS-3 Ready Set* and *AEPS-3 FACS*. The social emotional area was the social area from the second edition. The *AEPS* has a long history and since its inception has included the social area, however in the *AEPS-3* multiple items were changed or revised in the third edition of the *AEPS-3* with many remaining the same (Macy, Chen, & Macy, 2019). Many of the parental comments in the open-ended section of the *AEPS-3 FACS* corroborate results from the strong correlations.

Social Communication. Social communication was the one area in which there was not a statistically significant correlation between the *AEPS-3 Ready Set* and the *AEPS-3 FACS* on the items. All items from the *AEPS-3 Ready Set* and *AEPS-3 FACS* are based on expressive language functioning which are important skills in kindergarten to help children get their needs met and interact with others. Teachers and parents were not in agreement on these items in their scoring. This could be because children may communicate differently across settings resulting in diverse opinions of development in this domain. Parents may be better able to decode their children's needs and communication shorthand and non-verbal communication where a teacher may not be as familiar. Future research will need to examine why the two groups were different in how they scored this area, as well as compare the *AEPS-3* social communication and literacy areas.

Literacy. There were moderate to strong correlations between literacy items on the *AEPS-3 Ready Set* and *AEPS-3 FACS*. This finding is important because a lot of educators and parents preparing children for kindergarten focus on the area of reading. Both the *AEPS-3 Ready Set* and *AEPS-3 FACS* can be used for transition by using the *AEPS-3* to gather information about academic skills/behaviors, as well as developmental. Macy and Macy (2016) used the newly developed experimental edition of the literacy domain from the *AEPS-3* in a study and found the measure to be helpful for assessing children in an inclusive preschool setting.

Math. There were moderate to strong positive correlations between math items on the *AEPS-3 Ready Set* and *AEPS-3 FACS*. This math domain was also where parents had the most comments added in the open-ended section of the *AEPS-3 FACS*. Macy et al (2015) is a study that used blind expert reviewers to give input in the *AEPS-3* items across all the developmental areas, as well as the two new academic areas of literacy and math. Vast differences in opinion existed between reviewers who provided feedback on the items.

What do parents want?

In the open-ended section of the *AEPS-3 FACS*, parents shared their wishes for their child. Most of the parents had comments about wanting their child to continue to develop in developmental areas (e.g., three-finger grasp to hold a writing utensil, tie shoes, etc.), as well as academics (e.g., learning letters and numbers, etc.). However, there were also areas of interactions with others that parents indicated as important for their child.

This study sample was one of convenience with self-selection of Head Start programs and participants. Additionally, the sample size of dyads reporting assessment information for 24 children is relatively small. Limitations also included some missing items from parents on the *AEPS-3 FACS*.

Findings from this study with parents of children enrolled in Head Start and their teachers are promising. More research is needed on the third edition of the *AEPS-3 Ready Set* and *AEPS-3 FACS* to explore the validity, reliability, and utility. It would be helpful for future studies to explore kindergarten and preschool educators' perceptions of incorporating *AEPS-3 Ready Set* into their assessment practices and curriculum. *AEPS-3* can corroborate information from multiple sources including professionals and parents.

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