Measuring Knowledge*
Appendix

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Contents

A Curriculum

A.1 Fine Motor Skills

Fine motor skills involve finger movements, such as the ability to grasp, release and stitch; and drawing and writing skills. Here we consider two types of fine motor skills: (1) finger movements related to grasping, releasing, stitching; and (2) the movements related to drawing and writing ability.

This task evaluates whether a child can grasp the writing instrument and make marks, scribbles, and shapes. It is not writing ability as in the ability to write letters or words.

The first category is related to finger movements regarding grasping, releasing, stitching.[1] In Table A.1, tasks progress from basic activities that require limited precision with the fine muscles of the hands (like holding and moving an object), to manipulating the object with movements that need incrementally more dexterity (like rotating the object), to complex tasks requiring finer and finer finger control (like unscrewing the top). Finally, tasks that require the most hand dexterity, as well as hand-eye coordination, come last.

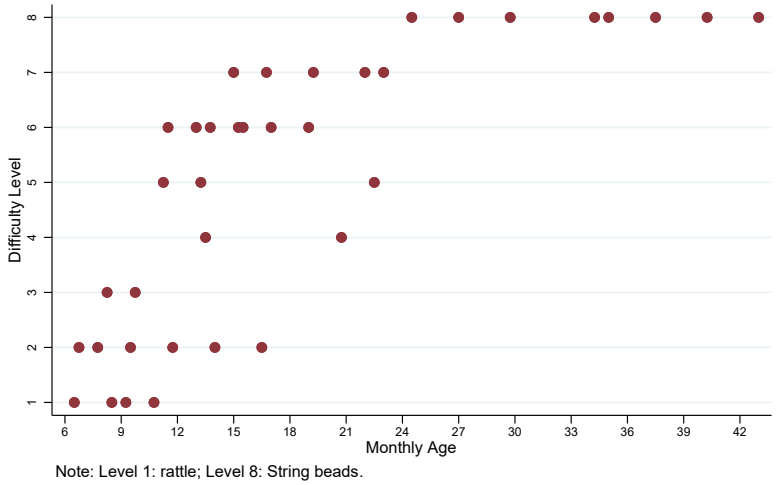
[1]These milestones are justified at https://www.chrichmond.org/therapy-services/occupational-therapy/developmental-milestones/fine-motor-skills-birth-to-2-years and http://www.kamloopschildrenstherapy.org/fine-motor-skills-infant-milestons.

Table A.1: Difficulty Level List for Finger Movement Tasks

Level 1	Rattle the bottle
Level 2	Shake and beat the drum with two hands
Level 3	Pull strings to get toy
Level 4	Rotate, push
Level 5	Place small objects into the bottle, shake it, and unscrew the lid
Level 6	Put small container into a larger container
Level 7	Take the ring off and slip the ring onto the bottle
Level 8	String beads

The Figure A.1 gives the timing of each finger movement task in the curriculum.

Figure A.1: The Timing of Fine Motor Skill (Grasping, Releasing Actions) Tasks across Difficulty Levels



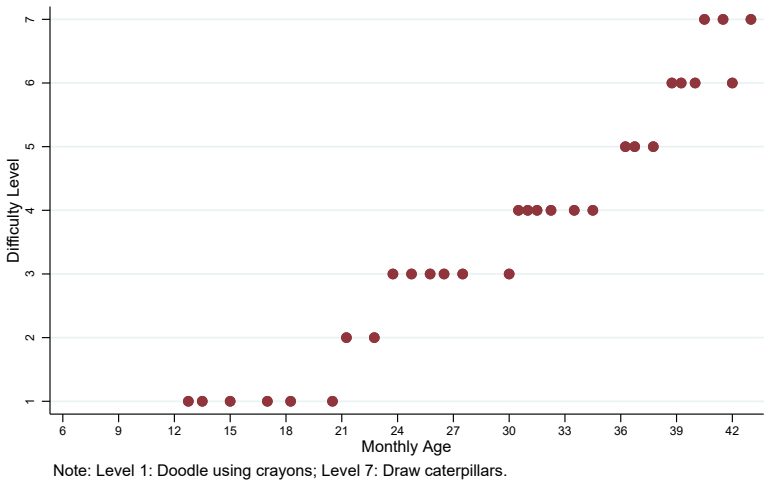
The second category is related to drawing and manual writing ability. The fine motor drawing tasks in Table A.2 focus on a child's ability to use a writing tool with increasing skill. First, a child must be able to hold the tool to make markings. Next, the child must incorporate increasingly complex cognitive skills to complete

the tasks. They start by imitating markings made by an adult. Then, when skill levels progress, they must make the marking after only hearing a verbal command from the adult. Finally, the child progresses from abstract shapes to representative drawings.

Table A.2: Difficulty Level List for Fine Motor Drawing Tasks

Level 1	Doodle using crayons
Level 2	Mimic circles
Level 3	Mimic circles and draw straight lines
Level 4	Draw a circle, vertical line, and horizontal line
Level 5	Draw circles, many lines, and crossing lines
Level 6	Draw a cross (or T), curves, and zigzag curves
Level 7	Draw caterpillars

Figure A.2: The Timing of Fine Motor Skill (Drawing) Tasks across Difficulty Levels



Note: Level 1: Doodle using crayons; Level 7: Draw caterpillars.

A.2 Gross Motor Skills

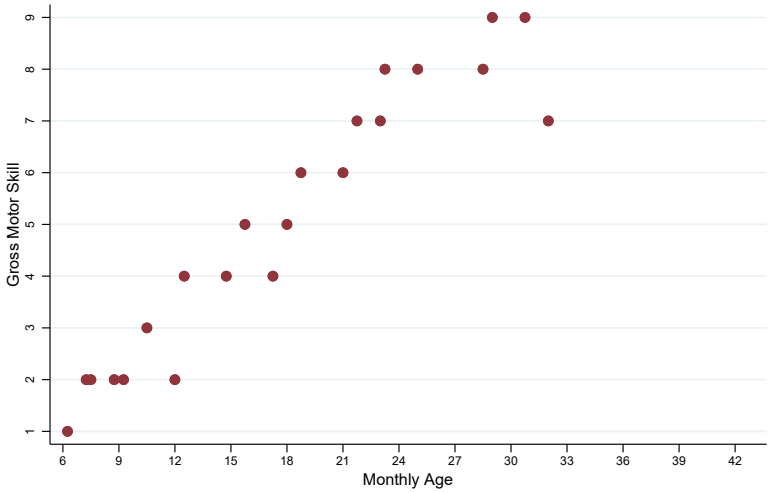
Gross motor skills are skills that requires movement and precision of large muscles in the body. Crawling, creeping, walking, throwing, and dancing are all examples of gross motor skills.

The designated gross motor tasks start with a relatively simple activity—i.e., touching the ball—only requiring the child to move one hand to the object. Next, the child must be able to move his or her entire body to interact with the toy. After mastery over those tasks, the child uses both gross motor skills and newly found cognitive ability to interact with the toy in increasingly complex ways. Pushing a toy requires coordination, standing, and walking skills. However, the child is still using the toy as a walking aid at this point. To progress to the next tasks, the child will not only have to master walking independently, but will also have to use the toy in a way that suggests intentionality (e.g., pulling, throwing). The final tasks require the child to integrate cognitive knowledge of direction, descriptive words, and gross motor mastery of balance.

Table A.3: Difficulty Level List for Gross Motor Tasks

Level 1	Let the child touch the ball
Level 2	The child moves (crawls) and follows the ball
Level 3	Roll the ball
Level 4	Push the toy when walking
Level 5	Pull the toy
Level 6	Pull and walk forward or backward
Level 7	Throw ball backward, forward, upward, and into a target
Level 8	Move forward or backward. Child can understand "upward," "downward," "inside of," "outside of," "stop," "go," "fast," "slow."
Level 9	Hold the soft ball on his or her head stably while walking

Figure A.3: The Timing of Gross Motor Skill Tasks across Difficulty Levels



Note: Level 1: Let the child touch the ball, Level 9: Hold the soft cloth ball on his head stably while walking.

A.3 Cognitive Skills

Cognitive skill is broadly defined as children's ability to apply what they have learned previously to new situations. This skill involves logic, problem-solving ability, memory, attention, and so on.

A.3.1 Spatial Skills

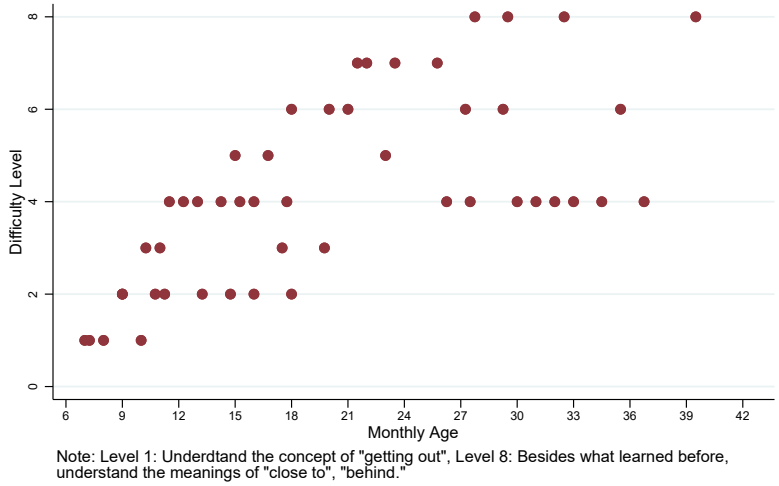
Spatial skills rely on a child's understanding of the three-dimensional world. Comprehending concepts of relative positioning—"inside of," "around," and "next to"—are the basics of this skill. The progression of these skills follows the child as he or she learns concepts that are more and more abstract. Beginning with "in" and "out" and progressing to "underneath," "around," "up," "next to," and "close to." As the tasks become more difficult, the child is expected to manipulate objects to demonstrate

knowledge and understanding of these concepts.

Table A.4: Difficulty Level List for Cognitive (Spatial) Tasks

Level 1	Understand the concept of "getting out"
Level 2	Understand the meaning of "in" and "out"
Level 3	Understand the concepts of "go in," "come out," and "under"
Level 4	Understand "inside," "outside," "underneath," and "on top of"
Level 5	Understand the meanings of "put it around" and "take it off"
Level 6	In addition to what was learned before, understand one more meaning of "up"
Level 7	In addition to what was learned before, understand one more meaning of "next to"
Level 8	In addition to what was learned before, understand the meanings of "close to" and "behind"

Figure A.4: The Timing of Cognitive Skill (Spatial) Tasks across Difficulty Levels



A.3.2 Knowing Objects and Objects' Functions

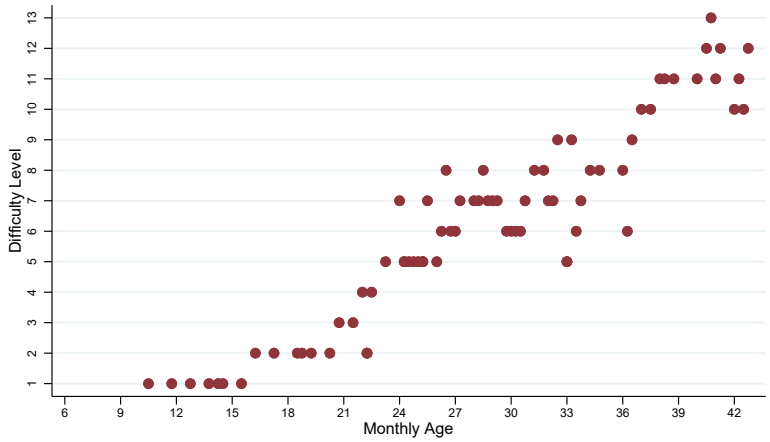
The knowing objects task set introduces preliteracy skills. It involves progressing interaction with pictures of objects and elements of storytelling. The tasks in the

Cognitive Knowing Objects progress from a simple understanding of the concept of pictures by acknowledging with vocalizations, to using receptive (heard) language to identify certain pictures. Receptive language is a skill developed prior to an expressive language where a child forms words to communicate. The children must use their expressive language to complete the following tasks that increase with difficulty as they must develop more and more language to identify an increasing number of images. To progress through level 7 and beyond, the child must display an increasingly sophisticated understanding of the stories presented, first simply naming actions, then answering questions, then talking abstractly about the story. Levels 10, 11, 12, and 13 ask the child to take the information presented and build on it by discussing the uses of objects presented and making connections with other images.

Table A.5: Difficulty Level List for Cognitive (Understanding Objects) Tasks

Level 1	The child looks at the pictures and vocalizes
Level 2	Name the objects and ask the child to point to the corresponding pictures
Level 3	The child can point to a picture and name the objects in it
Level 4	The child can point to two or more pictures and name the objects in them
Level 5	The child can point to three or more pictures and name the objects in them
Level 6	The child can point to six or more pictures and name the objects in them
Level 7	The child can talk about the pictures, answer questions, and understand or name the actions (eat, play, etc.)
Level 8	The child can follow the storyline, name actions, and answer questions
Level 9	The child can understand stories and talk about the content of the pictures
Level 10	The child can keep up with the development of the story
Level 11	The child can say the name of each graphic, discuss the role of each item, and then link the graphics in the card together
Level 12	The child can name the objects in the picture, link the different pictures together, and discuss some of the activities in the pictures
Level 13	The child can name the objects in the picture and talk about the functions of objects

Figure A.5: The Timing of Cognitive Skill (Understanding Objects) Tasks across Difficulty Levels



Note: Level 1: Look at the pictures and vocalize; Level 13: The child can name the things in the picture and talk about the function of objects.

A.3.3 Color

In the color skill set, tasks progress from passive interactions (child hearing about color) to actively naming colors, to finally making connections with colors.

Table A.6: Difficulty Level List for Cognitive (Color) Tasks

Level 1	Caregiver talks about the color
Level 2	The child can identify the color
Level 3	Match different colors

Figure A.6: The Timing of Cognitive Skill (Understanding Color) Tasks across Difficulty Levels

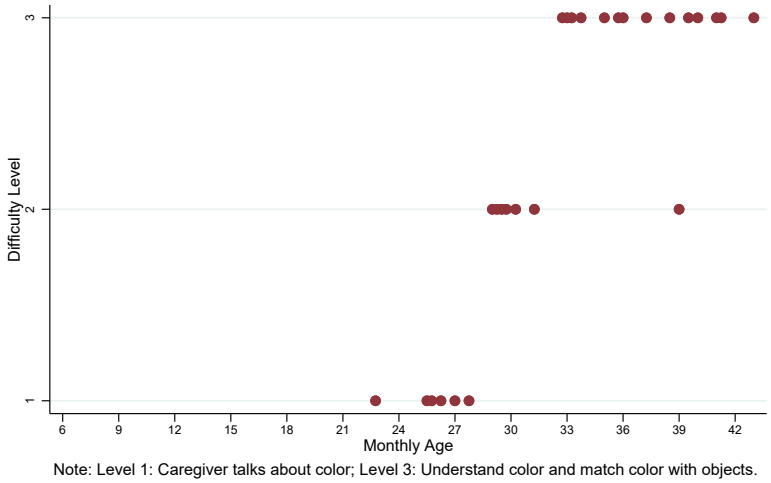


Table A.7: Difficulty Level List for Cognitive (Order: Understanding Upward, Forward, First, Some, All, Next, and Last) Tasks

Level 1	Child learns how to string beads and understands the meanings of "upward" and "downward"
Level 2	Understand the meanings of "upward," "downward," "first," and "then"
Level 3	Understand the concepts of "first," "finally," "in front of," and "behind"

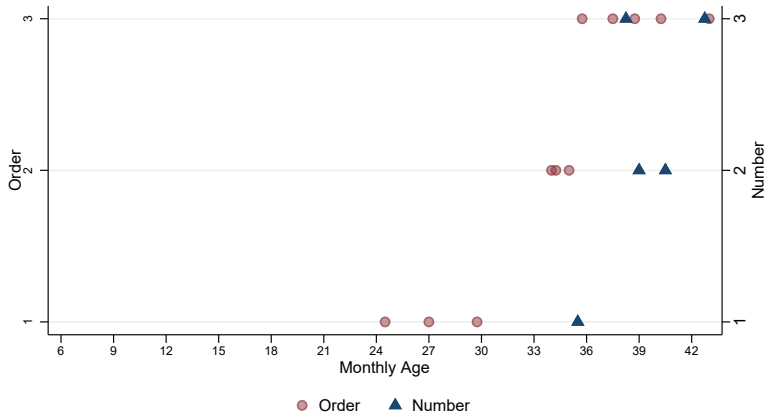
Cognitive ability first progresses to more abstract concepts of direction: "upward" and "downward." Then, the relative concepts of "first," "last," and "behind" are introduced.

Table A.8: Difficulty Level List for Cognitive (Number) Tasks

Level 1	Child learns how to count, can count up to 4
Level 2	Child can count from 1 to 4, then count two objects: 1, 2
Level 3	Child can count from 1 to 4 and sort the card by the number of points on each card

Number tasks progress from the rote learning of numbers in order, to understanding one-to-one relationships of numbers, to sorting objects when counting. Finally, the concept of number representation is introduced.

Figure A.7: The Timing of Cognitive Skill (Understanding Order and Numbers) Tasks across Difficulty Levels



Note: Order level 1: Understanding "upward and downward"; level 3: Understanding the concepts of "first, finally, in front of, and behind."
Number level 1: learn how to count; level 3: Sorting the card by the number of points on each card.

A.3.4 Match

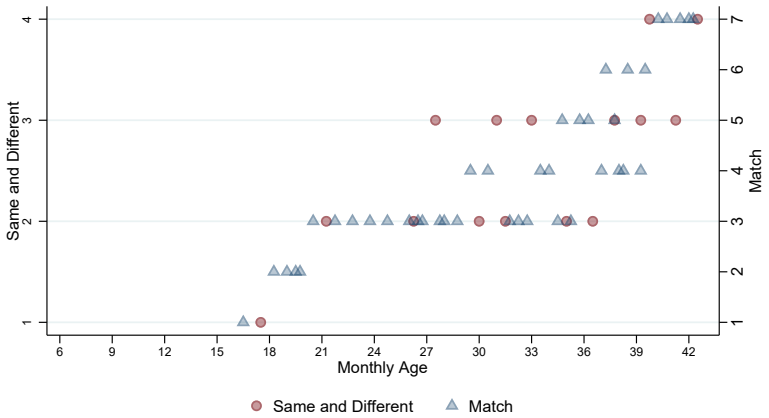
This entails matching different pieces from simple puzzles to complicated puzzles. This set of tasks builds on the child's spatial awareness skills. The ability to fill in missing objects and to understand how objects fit together is important in the

development of spatial awareness. The individual tasks progress from simply placing 1–2 puzzle pieces, to completing the puzzle, to making patterns and using emerging language skills to describe pieces. As the children gain proficiency in these skills, they are able to complete puzzles of increasing complexity and to restore jumbled pieces to the original puzzle.

Table A.9: Difficulty Level List for Cognitive (Match) Tasks

Level 1	The child can put one piece in the puzzle
Level 2	The child can put at least two pieces in the puzzle
Level 3	The child can complete the simple puzzle
Level 4	The child can complete the puzzle and name different pieces
Level 5	The child learns to put together puzzle pieces to form the complete pattern
Level 6	With the caregiver's help, the child can complete the puzzle with more pieces
Level 7	The child can restore the puzzle to the original

Figure A.8: The Timing of Cognitive Skill (Matching and Understanding) Tasks across Difficulty Levels



Note: Same and Different level 1: teaching the meaning of "same", level 4 the child understands the concept of "same" and "different."
Match level 1: teaching one shape puzzle; level 7: match different shape pieces.

A.4 Language Skills

Language skill is the ability of children to communicate their needs, thoughts, feelings and ideas in a way that can be understood by the caregiver. It includes vocalizations, gestures, spoken words and other signals.

A.4.1 Learn Words

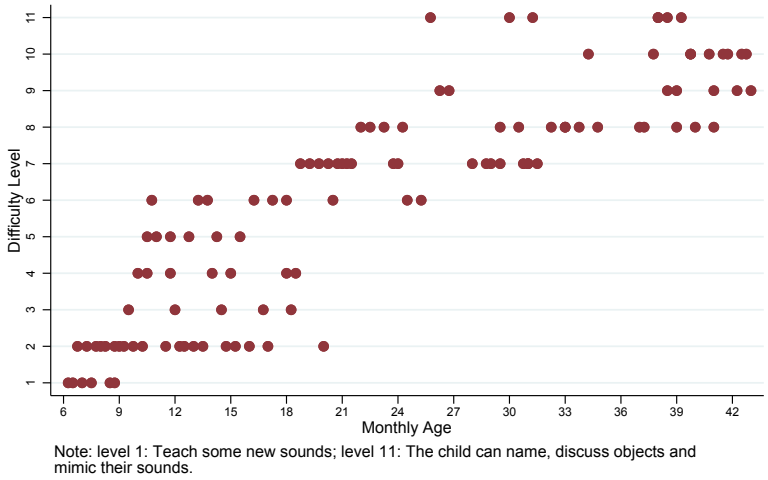
Table A.10: Difficulty Level List for Language (Knowing Objects and Understanding the Function of Objects) Tasks

Level 1	Caregiver and baby make sounds to each other to interact
Level 2	Caregiver tells baby the things she does in the house
Level 3	To teach baby to recognize people's names
Level 4	Baby learns movements that show intimacy: clapping, bye-bye, and thank you
Level 5	Caregiver and child look at the pictures together, and let the child vocalize and touch the pictures
Level 6	Baby is to recognize at least one body part
Level 7	The child identifies and/or names ordinary objects
Level 8	The child points to the pictures which are being named, names one or more pictures, mimic the sound of the objects
Level 9	The child points to the pictures which are being named, names two or more pictures, mimic the sound of the objects
Level 10	The child points at 7 or more than 7 pictures and talk about them
Level 11	Teach the child some simple descriptive words and the child names objects at home, and tells the usage of those objects

The language skill tasks increase in difficulty with the expectation that the child will learn to identify and use expressive language to indicate understanding. The tasks begin with the baby passively listening as the caregiver makes sounds and

speaks. The child then plays a more active role, expected to indicate understanding (receptive language) and use simple gestures to indicate meaning. The language skills tasks begin simply with the baby passively listening as the caregiver makes sounds and speaks. The child then plays a more active role, expected to indicate understanding (receptive language) and use simple gestures to indicate meaning. As understanding and vocabulary increase, the child will name more picture and learn to describe them. Finally, the child will learn the names and uses of objects in the child's everyday environment.

Figure A.9: The Timing of Language Skill (Knowing Objects) Tasks across Difficulty Levels



Note: level 1: Teach some new sounds; level 11: The child can name, discuss objects and mimic their sounds.

A.4.2 Dialogue

Dialogue: caregiver talks to children

Table A.11: Difficulty Level List for Language (Dialogue) Tasks

Level 1	Caregiver talks to the baby when doing housework
Level 2	Use words that child learned to answer or create a new conversation

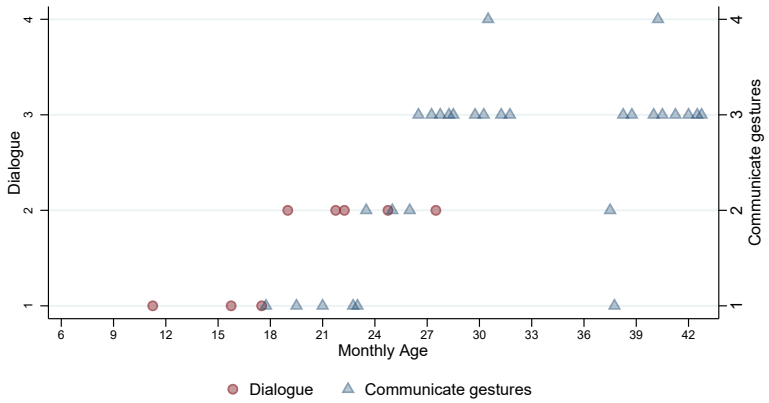
As the child grows, the caregiver progresses from simply narrating events to building on words the child has learned to scaffold language development.

A.4.3 Communicate Gestures

Table A.12: Difficulty Level List for Language (Communicate Gestures) Tasks

Level 1	The baby listens to simple instructions given by the caregiver
Level 2	Caregiver performs some activities with the child
Level 3	Let the child learn to talk about the pictures, act according to the pictures, answer questions, and name related actions

Figure A.10: The Timing of Language Skill (Communicate Gestures) Tasks across Difficulty Levels



Note: Dialogue level 1: Talking to the child; level 2: Using the words the child learned to create conversation.
Communicate gestures level 1: the child listens to simple instructions; and level 4: the child can act as other roles, e.g., father, mother.

B Test of the Condition That $K(s, \ell, a) = K(s, \ell, a')$ (Up to Denver Endline Age)

B.1 Language Skill

Table B.1: Test of the Condition That $K(s, \ell, a) = K(s, \ell, a')$ for **Language Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
2	**Average Passing Rate**				
	Young	0	0.283	0.723	1
	Old	0	0.321	0.656	1
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		0.148	**0.004**	
	N	117	112	112	108
	Latent Skill Range	[0, 0]	[0.077, 0.5]	[0.5, 0.917]	
	Age at Enrollment (Months)				
	Young	12.432	10.267	10.049	13.611
	Old	17.909	13.940	13.871	18.352
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 2				
	Monthly Age (Young)	13.186	10.543	10.179	14.676
	Monthly Age (Old)	19.103	13.991	14.478	20.000
	Curriculum Age Range for Level 2: [6.75, 20]				
3	**Average Passing Rate**				
	Young	0	0.513	1.000	
	Old	0	0.514	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		0.969		
	N	122	136	134	
	Latent Skill Range	[0, 0]	[0.2, 0.8]	[1, 1]	
	Age at Enrollment (Months)				
	Young	12.162	10.147	11.715	
	Old	17.140	13.866	16.480	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 3				
	Monthly Age (Young)	14.035	11.638	13.352	
	Monthly Age (Old)	17.671	15.310	17.286	
	Curriculum Age Range for Level 3: [9.5, 18.25]				
4	**Average Passing Rate**				
	Young	0	0.354	0.648	1
	Old	0	0.404	0.595	1
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		**0.020**	**0.014**	
	N	89	105	104	109
	Latent Skill Range	[0, 0]	[0.167, 0.5]	[0.5, 0.833]	
	Age at Enrollment (Months)				
	Young	12.067	10.296	10.500	12.433
	Old	17.136	14.150	14.767	17.325
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 4				
	Monthly Age (Young)	13.739	11.101	11.000	14.397
	Monthly Age (Old)	18.239	15.771	15.514	18.245
	Curriculum Age Range for Level 4: [10, 18.5]				
5	**Average Passing Rate**				
	Young	0	0.479	1.000	
	Old	0	0.497	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		0.583		
	N	116	123	39	
	Latent Skill Range	[0, 0]	[0.167, 0.833]	[1, 1]	
	Age at Enrollment (Months)				
	Young	11.439	9.762	11.565	
	Old	14.875	12.102	14.922	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 5				
	Monthly Age (Young)	12.268	10.672	12.337	
	Monthly Age (Old)	15.065	12.699	15.109	
	Curriculum Age Range for Level 5: [10.5, 15.5]				

1. Groups are categorized by the passing rate for each skill. τ_1 is for the children with lowest passing rate and τ_4 is for the children with highest passing rate.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table B.2: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
6	**Average Passing Rate**					
	Young	0	0.344	0.720	1	
	Old	0	0.398	0.692	1	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.002**	0.080		
	N	74	193	192	194	
	Latent Skill Range	[0, 0]	[0.1, 0.5]	[0.5, 0.9]		
	Age at Enrollment (Months)					
	Young	14.822	11.903	10.862	15.602	
	Old	22.639	19.081	17.865	22.099	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 6					
	Monthly Age (Young)	18.178	13.267	12.380	17.750	
	Monthly Age (Old)	24.472	19.953	18.730	24.212	
	Curriculum Age Range for Level 6: [10.75, 25.25]					
7	**Average Passing Rate**					
	Young	0.228	0.521	0.686	0.830	0.977
	Old	0.219	0.534	0.678	0.828	0.992
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.687	0.158	0.240	0.834	**0.002**
	N	138	137	137	137	137
	Latent Skill Range	[0, 0.417]	[0.417, 0.625]	[0.625, 0.75]	[0.75, 0.917]	[0.917, 1]
	Age at Enrollment (Months)					
	Young	13.279	13.362	12.068	13.056	12.476
	Old	21.632	20.761	20.921	21.180	22.535
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7					
	Monthly Age (Young)	19.911	19.674	19.540	19.504	19.708
	Monthly Age (Old)	22.868	22.004	21.613	21.985	24.189
	Curriculum Age Range for Level 7: [19.25, 31.5]					
8	**Average Passing Rate**					
	Young	0.335	0.626	0.743	0.858	1
	Old	0.281	0.626	0.740	0.876	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.071	0.939	0.542	**0.010**	
	N	137	137	137	137	137
	Latent Skill Range	[0, 0.533]	[0.545, 0.688]	[0.688, 0.8]	[0.8, 1]	[1, 1]
	Age at Enrollment (Months)					
	Young	13.471	12.565	12.948	13.970	12.329
	Old	21.358	20.700	21.258	22.508	22.121
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 8					
	Monthly Age (Young)	22.321	22.218	22.329	22.115	22.466
	Monthly Age (Old)	23.171	22.842	23.515	24.453	25.340
	Curriculum Age Range for Level 8: [21.75, 40.75]					

1. Groups are categorized by the passing rate for each skill. τ_1 is for the children with lowest passing rate and τ_4 is for the children with highest passing rate.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table B.3: Test of the Condition That $K(s, \ell, a) = K(s, \ell, a')$ for **Language Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.187	0.634	1	
	Old	0.198	0.702	1	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value	0.713	**0.001**		
	N	169	169	279	
	Latent Skill Range	[0, 0.5]	[0.5, 0.857]	[1, 1]	
9	**Age at Enrollment (Months)**				
	Young	13.140	14.906	12.505	
	Old	21.952	22.149	21.202	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 9				
	Monthly Age (Young)	27.012	26.844	26.761	
	Monthly Age (Old)	27.330	26.455	28.212	
	Curriculum Age Range for Level 9: [26, 42.75]				
	Average Passing Rate				
	Young	0	0.512	0.794	1
	Old	0	0.477	0.787	1
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		0.168	0.670	
	N	45	96	96	275
	Latent Skill Range	[0, 0]	[0.2, 0.667]	[0.667, 0.889]	[1, 1]
10	**Age at Enrollment (Months)**				
	Young	11.446	13.515	16.760	13.861
	Old	17.955	21.564	23.367	22.201
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 10				
	Monthly Age (Young)	35.141	35.333	34.880	35.287
	Monthly Age (Old)	34.409	34.771	34.589	35.136
	Curriculum Age Range for Level 10: [26, 39]				
	Average Passing Rate				
	Young	0.331	0.719	1	
	Old	0.271	0.736	1	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value	**0.031**	0.194		
	N	189	188	274	
	Latent Skill Range	[0, 0.571]	[0.571, 0.857]	[1, 1]	
11	**Age at Enrollment (Months)**				
	Young	12.693	13.633	12.655	
	Old	21.306	22.165	20.998	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 11				
	Monthly Age (Young)	27.008	26.210	26.564	
	Monthly Age (Old)	26.207	26.896	27.860	
	Curriculum Age Range for Level 11: [34, 42.5]				

1. Groups are categorized by the passing rate for each skill. τ_1 is for the children with lowest passing rate and τ_4 is for the children with highest passing rate.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

B.2 Cognitive Skill

Table B.4: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0	0.332	0.674	1
	Old	0	0.292	0.644	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.020**	0.121	
	N	124	177	176	94
	Latent Skill Range	[0, 0]	[0.125, 0.5]	[0.5, 0.875]	[1, 1]
	Age at Enrollment (Months)				
2	Young	15.349	11.953	10.918	11.920
	Old	21.250	17.829	17.588	19.521
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Age at Level 2				
	Young Age Level	19.566	19.364	19.333	19.053
	Old Age Level	22.112	20.234	20.304	20.754
	Curriculum Age Range for Level 2: [16.25, 22.25]				
	Average Passing Rate				
	Young	0	0.500	1	
	Old	0	0.500	1	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	188	111	193	
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]	
	Age at Enrollment (Months)				
3	Young	12.807	11.777	11.474	
	Old	19.462	17.550	17.878	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Age at Level 3				
	Young Age Level	21.105	21.125	21.082	
	Old Age Level	21.219	21.125	21.155	
	Curriculum Age Range for Level 3: [20.75, 21.5]				
	Average Passing Rate				
	Young	0	0.500	1	
	Old	0	0.500	1	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	257	81	191	
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]	
	Age at Enrollment (Months)				
4	Young	12.978	10.982	12.002	
	Old	19.820	18.113	18.963	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Age at Level 4				
	Young Age Level	22.265	22.250	22.257	
	Old Age Level	22.258	22.250	22.295	
	Curriculum Age Range for Level 4: [22, 22.5]				
	Average Passing Rate				
	Young	0.348	0.785	1	
	Old	0.321	0.782	1	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.308	0.846		
	N	207	207	251	
	Latent Skill Range	[0, 0.6]	[0.6, 0.9]	[1, 1]	
	Age at Enrollment (Months)				
5	Young	13.731	12.784	12.575	
	Old	22.162	20.087	21.706	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Age at Level 5				
	Young Age Level	25.472	25.270	25.400	
	Old Age Level	25.787	25.468	27.028	
	Curriculum Age Range for Level 5: [23.25, 33]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level).
Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3-6, and 8-12 are divided in three groups. Levels 3, 4, 9, 11, and 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 5, 6, and 8: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 7 is divided in 5 groups with equal sizes. Finally, Level 13 is divided into 2 groups: τ_1 is children with passing rate zero, and τ_2 is the children with passing rate one.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table B.5: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	Average Passing Rate					
	Young	0.419	0.784	1		
	Old	0.412	0.796	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.779	0.195			
	N	191	190	282		
	Latent Skill Range	[0, 0.667]	[0.667, 0.857]	[1, 1]		
	Age at Enrollment (Months)					
6	Young	13.348	14.400	11.707		
	Old	22.306	21.597	20.542		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Age at Level 6					
	Young Age Level	29.220	29.472	29.208		
	Old Age Level	29.619	29.860	30.110		
	Curriculum Age Range for Level 6: [26.25, 36.25]					
	Average Passing Rate					
	Young	0.224	0.550	0.731	0.889	1
	Old	0.213	0.547	0.735	0.888	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.663	0.778	0.632	0.905	
	N	136	135	135	135	135
	Latent Skill Range	[0, 0.429]	[0.429, 0.636]	[0.667, 0.8]	[0.8, 1]	[1, 1]
	Age at Enrollment (Months)					
7	Young	13.018	13.189	12.909	12.764	12.405
	Old	22.070	21.046	21.182	20.428	22.547
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Age at Level 7					
	Young Age Level	28.388	28.395	28.407	28.469	28.066
	Old Age Level	28.772	28.659	28.781	28.792	29.461
	Curriculum Age Range for Level 7: [24, 33.75]					
	Average Passing Rate					
	Young	0.349	0.772	1		
	Old	0.324	0.770	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.380	0.827			
	N	200	199	259		
	Latent Skill Range	[0, 0.667]	[0.667, 0.857]	[1, 1]		
	Age at Enrollment (Months)					
8	Young	12.715	14.083	12.447		
	Old	21.619	21.981	21.236		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Age at Level 8					
	Young Age Level	31.078	31.510	30.026		
	Old Age Level	31.259	31.690	31.492		
	Curriculum Age Range for Level 8: [26.5, 36]					
	Average Passing Rate					
	Young	0.000	0.500	1		
	Old	0.000	0.500	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value					
	N	82	91	329		
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]		
	Age at Enrollment (Months)					
9	Young	11.982	13.467	14.485		
	Old	20.519	21.239	22.244		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Age at Level 9					
	Young Age Level	34.024	34.875	34.442		
	Old Age Level	34.509	34.875	34.825		
	Curriculum Age Range for Level 9: [33.25, 36.5]					

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level).
Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3-6, and 8-12 are divided in three groups. Levels 3, 4, 9, 11, and 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 5, 6, and 8: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 7 is divided in 5 groups with equal sizes. Finally, Level 13 is divided into 2 groups: τ_1 is children with passing rate zero, and τ_2 is the children with passing rate one.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table B.6: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3
	Average Passing Rate			
	Young	0	0.514	1.000
	Old	0	0.507	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.805	
	N	63	121	249
	Latent Skill Range	[0, 0]	[0.25, 0.75]	[1, 1]
	Age at Enrollment (Months)			
10	Young	12.953	16.292	15.035
	Old	19.419	23.400	22.735
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 10			
	Young Age Level	37.508	39.192	37.741
	Old Age Level	38.099	39.503	38.730
	Curriculum Age Range for Level 10: [37, 42.5]			
	Average Passing Rate			
	Young	0.000	0.496	1
	Old	0.000	0.574	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.010**	
	N	41	184	146
	Latent Skill Range	[0, 0]	[0.167, 0.833]	[1, 1]
	Age at Enrollment (Months)			
11	Young	12.405	15.305	16.253
	Old	19.638	22.735	23.642
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 11			
	Young Age Level	38.900	39.323	39.136
	Old Age Level	39.270	39.539	39.318
	Curriculum Age Range for Level 11: [38, 42.25]			
	Average Passing Rate			
	Young	0.000	0.510	1
	Old	0.000	0.576	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.049**	
	N	30	68	163
	Latent Skill Range	[0, 0]	[0.333, 0.667]	[1, 1]
	Age at Enrollment (Months)			
12	Young	14.563	16.486	16.728
	Old	22.661	23.129	23.935
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 12			
	Young Age Level	24.610	24.482	24.925
	Old Age Level	27.255	26.683	27.019
	Curriculum Age Range for Level 12: [40.5, 42.75]			
	Average Passing Rate			
	Young	0.000	1.000	
	Old	0.000	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value			
	N	81	149	
	Latent Skill Range	[0, 0]	[1, 1]	
	Age at Enrollment (Months)			
13	Young	14.327	17.325	
	Old	23.058	23.608	
	Test $a = a'$: p-value	**0.000**	**0.000**	
	Average Age at Level 13			
	Young Age Level	40.750	40.750	
	Old Age Level	40.750	40.750	
	Curriculum Age Range for Level 13: [40.75, 40.75]			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level).
Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3-6, and 8-12 are divided in three groups. Levels 3, 4, 9, 11, and 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 5, 6, and 8: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 7 is divided in 5 groups with equal sizes. Finally, Level 13 is divided into 2 groups: τ_1 is children with passing rate zero, and τ_2 is the children with passing rate one.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

B.3 Fine Motor Skill

Table B.7: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Fine Motor Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	Average Passing Rate					
	Young	0.000	0.367	1	1	
	Old	0.000	0.430	1	1	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.008**	**0.031**		
	N	56	98	97	226	
	Latent Skill Range	[0, 0]	[0.167, 0.5]	[0.5, 0.833]	[1, 1]	
1	**Age at Enrollment (Months)**					
	Young	13.578	11.202	10.865	12.250	
	Old	19.231	15.939	14.785	18.342	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	
	Average Age at Level 1					
	Young Age	17.419	16.465	16.175	16.820	
	Old Age	20.000	18.517	17.848	19.696	
	Curriculum Age Range for Level 1: [12.75, 20.5]					
	Average Passing Rate					
	Young	0	0.500	1.000		
	Old	0	0.500	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value					
	N	80	90	369		
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]		
2	**Age at Enrollment (Months)**					
	Young	13.367	12.862	12.007		
	Old	20.929	19.372	18.874		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Age at Level 2					
	Young Age	22.100	22.000	21.953		
	Old Age	22.279	22.000	22.071		
	Curriculum Age Range for Level 2: [21.75, 22.75]					
	Average Passing Rate					
	Young	0.109	0.510	0.699	0.814	1
	Old	0.154	0.501	0.693	0.815	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.087	0.546	0.461	0.629	
	N	104	104	104	104	252
	Latent Skill Range	[0, 0.333]	[0.4, 0.667]	[0.667, 0.8]	[0.8, 0.833]	[1, 1]
3	**Age at Enrollment (Months)**					
	Young	13.292	14.184	13.105	13.545	11.858
	Old	22.054	22.021	20.464	20.375	21.120
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Age at Level 3					
	Young Age	26.047	26.163	26.147	26.333	26.163
	Old Age	26.658	26.428	26.392	26.410	26.926
	Curriculum Age Range for Level 3: [23.75, 30]					
	Average Passing Rate					
	Young	0.340	0.784	1		
	Old	0.341	0.782	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.987	0.892			
	N	110	109	404		
	Latent Skill Range	[0, 0.667]	[0.667, 0.833]	[1, 1]		
4	**Age at Enrollment (Months)**					
	Young	12.099	14.156	13.117		
	Old	21.298	21.901	21.696		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Age at Level 4					
	Young Age	32.136	32.106	32.112		
	Old Age	32.114	32.098	32.178		
	Curriculum Age Range for Level 4: [30.5, 34.5]					

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level). Level 1 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 2, and 4-7 are divided in three groups. Levels 2 and 7 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 4-6: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 3 is divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table B.8: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Fine Motor Skill** Using UHP Difficulty Levels (Up to Denver Endline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3
5	**Average Passing Rate**			
	Young	0.191	0.588	1
	Old	0.261	0.590	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.175	0.893	
	N	78	77	270
	Latent Skill Range	[0, 0.5]	[0.5, 0.667]	[1, 1]
	Age at Enrollment (Months)			
	Young	14.835	14.775	14.955
	Old	21.845	21.973	22.869
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 5			
	Young Age	36.677	36.769	36.647
	Old Age	36.851	36.739	36.700
	Curriculum Age Range for Level 5: [36.25, 37.75]			
6	**Average Passing Rate**			
	Young	0.137	0.609	1
	Old	0.206	0.630	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.104	0.443	
	N	72	72	198
	Latent Skill Range	[0, 0.5]	[0.5, 0.75]	[1, 1]
	Age at Enrollment (Months)			
	Young	14.271	14.542	16.448
	Old	21.813	22.583	23.733
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 6			
	Young Age	39.451	39.918	39.555
	Old Age	40.063	39.878	39.714
	Curriculum Age Range for Level 6: [38.75, 42]			
7	**Average Passing Rate**			
	Young	0.000	0.486	1.000
	Old	0.000	0.516	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.393	
	N	33	69	155
	Latent Skill Range	[0, 0]	[0.333, 0.667]	[1, 1]
	Age at Enrollment (Months)			
	Young	15.353	15.608	16.951
	Old	22.234	23.500	23.730
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Age at Level 7			
	Young Age	41.490	41.509	41.170
	Old Age	41.370	41.568	41.222
	Curriculum Age Range for Level 7: [40.5, 43]			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level). Level 1 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 2, and 4-7 are divided in three groups. Levels 2 and 7 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 4-6: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 3 is divided in 5 groups with equal sizes.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

C Testing Measured Skill Invariance (Up to Denver Endline Age)

Table C.1: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s, a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Language Level 2			
Endline	Young	0.020	0.916	1.190	-0.227
	Old	-1.906	-1.010	-0.428	-1.551
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 3			
Endline	Young	-0.012	1.244	0.495	
	Old	-1.430	-0.791	-1.060	
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	
		UHP Language Level 4			
Endline	Young	-0.299	1.105	0.933	0.195
	Old	-1.676	-0.736	-0.881	-1.061
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 5			
Endline	Young	0.355	1.382	0.417	
	Old	-1.172	0.333	-0.323	
(Language and Cognitive)	p-value	**0.000**	**0.000**	0.201	
		UHP Language Level 6			
Endline	Young	-1.455	0.106	0.661	-0.441
	Old	-2.875	-2.140	-1.720	-2.436
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Levels 2, 4, and 6 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one, τ_2, and τ_3 are equally divided by the rest sample. Levels 3, and 5 are divided in three groups. Levels 3 and 5 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table C.2: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels—Continuous (Up to Denver Endline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 7				
Endline	Young	-0.831	-0.402	0.191	0.170	0.497
	Old	-2.445	-2.354	-2.264	-2.323	-2.082
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 8				
Endline	Young	-0.560	0.076	-0.169	-0.702	0.545
	Old	-2.279	-2.317	-2.555	-2.566	-1.949
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 9				
Endline	Young	-0.806	-1.108	0.264		
	Old	-2.742	-2.537	-1.965		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Language Level 10				
Endline	Young	0.110	-0.744	-1.940	-0.614	
	Old	-1.649	-2.376	-2.773	-2.483	
(Language and Cognitive)	p-value	**0.006**	**0.000**	**0.001**	**0.000**	
		UHP Language Level 11				
Endline	Young	-0.422	-0.602	0.194		
	Old	-2.359	-2.617	-2.062		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). levels 7 and 8 are divided in 5 equally sized groups sorted by the passing rate.
Levels 9, and 11 are divided in three groups. For Levels 9 and 11: τ_3 are children with passing rate 1, and τ_1, and τ_2 are equally divided according to the rest sample.
Level 10 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

C.1 Cognitive Skill

Table C.3: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Endline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Cognitive Level 2				
Endline	Young	28.815	26.474	24.986	24.871	
	Old	31.023	30.186	29.621	30.323	
(Language and Cognitive)	p-value	**0.026**	**0.000**	**0.000**	**0.000**	
		UHP Cognitive Level 3				
Endline	Young	-0.251	0.237	0.664		
	Old	-2.256	-1.456	-1.280		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 4				
Endline	Young	-0.315	0.438	0.433		
	Old	-2.289	-1.875	-1.585		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 5				
Endline	Young	-0.680	-0.067	0.132		
	Old	-2.572	-2.287	-2.135		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 6				
Endline	Young	-0.606	-0.545	0.335		
	Old	-2.501	-2.529	-1.937		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 7				
Endline	Young	-0.490	-0.190	-0.326	-0.048	0.480
	Old	-2.400	-2.474	-2.373	-2.204	-2.131
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and group τ_3, τ_4 is the children with highest passing rate (according to the level). Level 2 is divided in four groups; τ_1 are children with passing rate zero, G4 are children with passing rate one, τ_2, and τ_3 are equally divided by the rest sample. Levels 3-6 are divided in three groups. Levels 3 and 4 are constructed as follows: τ_1 correspond to children with passing rate zero, G3 are children with passing rate one and τ_2 are the rest. For Levels 5 and 6: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 7 is divided in 5 groups with equal sizes.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table C.4: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Cognitive τ Groups by Difficulty Levels—Continuous (Up to Denver Endline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3
	UHP Cognitive Level 8			
Endline	Young	-0.512	-0.521	0.313
	Old	-2.512	-2.584	-2.022
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**
	UHP Cognitive Level 9			
Endline	Young	-0.156	-0.595	-0.793
	Old	-2.469	-2.368	-2.529
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**
	UHP Cognitive Level 10			
Endline	Young	-0.213	-1.911	-1.103
	Old	-1.986	-2.607	-2.621
(Language and Cognitive)	p-value	**0.000**	**0.002**	**0.000**
	UHP Cognitive Level 11			
Endline	Young	-0.026	-1.642	-1.229
	Old	-2.267	-2.644	-2.570
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**
	UHP Cognitive Level 12			
Endline	Young	-0.998	-2.068	-1.851
	Old	-2.427	-2.704	-2.578
(Language and Cognitive)	p-value	**0.009**	**0.017**	**0.000**
	UHP Cognitive Level 13			
Endline	Young	-1.480	-2.065	
	Old	-2.936	-2.460	
(Language and Cognitive)	p-value	**0.000**	**0.024**	

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level). Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and $\tau 3$ are equally divided according to the rest sample. Levels 8-12 are divided in three groups. Levels 9, 11, and 12 are constructed as follows: $\tau 1$ correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Level 8: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Finally, Level 13 is divided into 2 groups: τ_1 is children with passing rate zero, and τ_2 is the children with passing rate one.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

C.2 Fine Motor

Table C.5: Tests of the Mean Differences of Latent Fine Motor Denver Score $Z(s,a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Endline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		Uzgiris Fine Motor Level 1				
Endline	Young	0.533	0.195	0.634	0.080	
	Old	-0.118	0.571	0.754	0.357	
(Fine Motor)	p-value	0.074	0.191	0.733	0.173	
		Uzgiris Fine Motor Level 2				
Endline	Young	0.506	0.452	0.366		
	Old	0.142	-0.094	0.261		
(Fine Motor)	p-value	0.266	0.071	0.491		
		Uzgiris Fine Motor Level 3				
Endline	Young	0.322	0.258	0.324	0.761	0.343
	Old	-0.118	-0.148	0.255	0.210	0.103
(Fine Motor)	p-value	0.125	0.103	0.819	**0.037**	0.162
		Uzgiris Fine Motor Level 4				
Endline	Young	0.381	0.832	0.347		
	Old	-0.130	-0.159	0.140		
(Fine Motor)	p-value	0.083	**0.000**	0.125		
		Uzgiris Fine Motor Level 5				
Endline	Young	0.242	0.704	0.549		
	Old	0.067	-0.080	-0.006		
(Fine Motor)	p-value	0.634	**0.017**	**0.001**		
		Uzgiris Fine Motor Level 6				
Endline	Young	0.340	0.493	0.473		
	Old	-0.460	0.242	0.214		
(Fine Motor)	p-value	**0.028**	0.412	0.129		
		Uzgiris Fine Motor Level 7				
Endline	Young	0.045	0.187	0.384		
	Old	-0.082	-0.187	0.023		
(Fine Motor)	p-value	0.846	0.178	**0.040**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3, τ_4 or τ_5 is the children with highest passing rate (according to the level). Level 1 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 2, and 4-7 are divided in three groups. Levels 2 and 7 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. For Levels 4-6: τ_3 are children with passing rate one. τ_1 and τ_2 are divided into equal sizes. Level 3 is divided in 5 groups with equal sizes.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

D Tests for up to Midline Measures

D.1 Language Skill

Table D.1: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
2	**Average Passing Rate**				
	Young	0	0.274	0.714	1
	Old	0	0.333	0.665	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.024**	**0.045**	
	N	119	110	109	109
	Latent Skill Range	[0, 0]	[0.1, 0.5]	[0.5, 0.9]	[1, 1]
	Age at Enrollment (Months)				
	Young	12.361	10.359	10.058	13.550
	Old	17.909	14.009	13.887	18.352
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 2				
	Young Age	12.721	10.614	10.223	14.595
	Old Age	19.103	14.382	14.193	20.000
	Curriculum Age Range for Level 2: [6.75, 20]				
3	**Average Passing Rate**				
	Young	0	0.510	1.000	
	Old	0	0.514	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.875		
	N	122	135	135	
	Latent Skill Range	[0, 0]	[0.2, 0.8]	[1, 1]	
	Age at Enrollment (Months)				
	Young	12.162	10.147	11.715	
	Old	17.140	13.866	16.480	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 3				
	Young Age	14.035	11.571	13.399	
	Old Age	17.671	15.310	17.286	
	Curriculum Age Range for Level 3: [9.5, 18.25]				
4	**Average Passing Rate**				
	Young	0	0.480	1.000	
	Old	0	0.513	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.157**		
	N	90	206	110	
	Latent Skill Range	[0, 0]	[0.167, 0.833]	[1, 1]	
	Age at Enrollment (Months)				
	Young	12.011	10.243	12.377	
	Old	17.136	14.178	17.325	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 4				
	Young Age	13.630	10.943	14.461	
	Old Age	18.239	15.637	18.245	
	Curriculum Age Range for Level 4: [10, 18.5]				
5	**Average Passing Rate**				
	Young	0	0.303	0.643	1
	Old	0	0.408	0.604	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.000**	0.214	
	N	116	62	61	39
	Latent Skill Range	[0, 0]	[0.167, 0.5]	[0.5, 0.833]	[1, 1]
	Age at Enrollment (Months)				
	Young	11.439	9.955	9.640	11.565
	Old	14.875	12.190	12.185	14.922
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 5				
	Young Age	12.268	10.667	10.662	12.337
	Old Age	15.065	12.819	12.815	15.109
	Curriculum Age Range for Level 5: [10.5, 15.5]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level).
Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero,
τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes.
Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, τ_6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equally sized subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table D.2: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5	τ_6
6	**Average Passing Rate**						
	Young	0	0.236	0.428	0.594	0.764	1
	Old	0	0.269	0.480	0.591	0.769	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.024**	**0.000**	0.862	0.706	
	N	94	89	89	88	89	193
	Latent Skill Range	[0, 0]	[0.143, 0.333]	[0.333, 0.5]	[0.5, 0.667]	[0.667, 0.857]	[1, 1]
	Age at Enrollment (Months)						
	Young	12.846	11.514	12.979	11.467	10.973	15.558
	Old	21.894	16.799	21.500	19.337	16.599	16.599
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 6						
	Young Age	14.415	12.693	14.011	13.094	12.424	17.220
	Old Age	23.553	17.257	22.750	20.407	17.419	24.212
	Curriculum Age Range for Level 6: [10.75, 25.25]						
7	**Average Passing Rate**						
	Young	0.064	0.386	0.627	0.857	1.000	
	Old	0.091	0.386	0.594	0.850	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.090	0.986	**0.006**	0.691		
	N	125	124	124	124	124	
	Latent Skill Range	[0, 0.25]	[0.25, 0.5]	[0.5, 0.714]	[0.714, 1]	[1, 1]	
	Age at Enrollment (Months)						
	Young	12.832	15.194	14.887	14.897	11.869	
	Old	20.152	21.920	21.754	22.668	21.818	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 7						
	Young Age	19.402	19.408	19.440	19.290	19.323	
	Old Age	21.541	22.986	22.597	23.783	23.746	
	Curriculum Age Range for Level 7: [19.25, 31.5]						
8	**Average Passing Rate**						
	Young	0.000	0.365	0.655	1.000		
	Old	0.000	0.365	0.731	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.977	0.000			
	N	98	125	124	141		
	Latent Skill Range	[0, 0]	[0.167, 0.5]	[0.5, 0.857]	[1, 1]		
	Age at Enrollment (Months)						
	Young	15.324	16.623	17.746	16.044		
	Old	20.977	21.500	23.527	24.024		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 8						
	Young Age	22.134	22.063	22.165	22.123		
	Old Age	22.994	22.742	24.594	26.238		
	Curriculum Age Range for Level 8: [21.75, 40.75]						

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level).
Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero,
τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes.
Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, τ_6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table D.3: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age)[3]—Continuous

Level	Category	τ_1	τ_2	τ_3
9	**Average Passing Rate**			
	Young	0.000	0.500	1
	Old	0.000	0.500	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value			
	N	92	62	131
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]
	Age at Enrollment (Months)			
	Young	19.801	19.711	18.675
	Old	23.872	23.531	23.039
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 9			
	Young Age	26.281	26.250	26.277
	Old Age	26.308	26.250	26.284
	Curriculum Age Range for Level 9: [26, 42.75]			
10	**Average Passing Rate**			
	Young	0.818		
	Old	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.172		
	N	21		
	Latent Skill Range	[0, 1]		
	Age at Enrollment (Months)			
	Young	25.955		
	Old	27.775		
	Test $a = a'$: p-value	**0.000**		
	Average Starting Age at Level 10			
	Young Age	34.250		
	Old Age	34.250		
	Curriculum Age Range for Level 10: [26, 39]			
11	**Average Passing Rate**			
	Young	0.000	0.529	1
	Old	0.000	0.520	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.806	
	N	73	56	160
	Latent Skill Range	[0, 0]	[0.333, 0.75]	[1, 1]
	Age at Enrollment (Months)			
	Young	19.101	22.386	18.570
	Old	22.500	25.000	23.817
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 11			
	Young Age	25.750	25.750	25.750
	Old Age	26.458	26.964	27.551
	Curriculum Age Range for Level 11: [34, 42.5]			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level).
Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero,
τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes.
Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, τ_6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equally sized subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table D.4: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5	τ_6
UHP Language Level 2							
Midline	Young	1.735	1.484	1.482	1.545		
	Old	1.404	1.946	2.019	1.640		
(Language and Cognitive)	p-value	0.101	**0.041**	**0.014**	0.673		
UHP Language Level 3							
Midline	Young	1.778	1.499	1.601			
	Old	1.720	1.986	1.771			
(Language and Cognitive)	p-value	0.791	**0.008**	0.364			
UHP Language Level 4							
Midline	Young	1.751	1.486	1.669			
	Old	1.832	1.931	1.722			
(Language and Cognitive)	p-value	0.680	**0.005**	0.817			
UHP Language Level 5							
Midline	Young	1.759	1.262	1.613	1.362		
	Old	2.051	1.987	1.666	2.108		
(Language and Cognitive)	p-value	0.111	**0.015**	0.860	**0.025**		
UHP Language Level 6							
Midline	Young	1.386	2.045	2.010	1.592	1.339	1.701
	Old	0.498	1.472	0.812	1.364	1.648	0.769
(Language and Cognitive)	p-value	**0.001**	**0.039**	**0.000**	0.316	0.173	**0.000**
UHP Language Level 7							
Midline	Young	1.635	1.826	1.771	2.073	1.635	
	Old	0.898	0.534	0.699	0.662	1.298	
(Language and Cognitive)	p-value	**0.002**	**0.000**	**0.000**	**0.000**	0.125	
UHP Language Level 8							
Midline	Young	1.687	1.714	1.577	1.866		
	Old	0.840	0.774	0.214	0.927		
(Language and Cognitive)	p-value	**0.001**	**0.000**	**0.000**	**0.000**		
UHP Language Level 9							
Midline	Young	0.847	0.894	1.503			
	Old	0.060	0.767	0.884			
(Language and Cognitive)	p-value	**0.003**	0.723	**0.002**			
UHP Language Level 10							
Midline	Young	0.689					
	Old	0.206					
(Language and Cognitive)	p-value	0.385					
UHP Language Level 11							
Midline	Young	0.686	0.339	1.357			
	Old	0.354	-0.010	0.877			
(Language and Cognitive)	p-value	0.244	0.314	**0.016**			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, τ_6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table D.5: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5	τ_6
		UHP Language Level 2					
Midline	Young	20.018	16.519	16.959	19.370		
	Old	23.074	21.702	20.870	22.804		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**		
		UHP Language Level 3					
Midline	Young	19.627	16.352	18.068			
	Old	22.771	21.418	21.167			
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**			
		UHP Language Level 4					
Midline	Young	19.429	16.464	19.412			
	Old	22.538	21.216	22.000			
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.002**			
		UHP Language Level 5					
Midline	Young	17.937	15.781	16.821	18.810		
	Old	21.976	19.565	18.483	21.438		
(Language and Cognitive)	p-value	**0.000**	**0.000**	0.125	0.051		
		UHP Language Level 6					
Midline	Young	19.667	20.044	19.814	17.744	16.488	20.728
	Old	23.902	22.438	24.634	24.444	22.243	24.831
(Language and Cognitive)	p-value	**0.000**	**0.005**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 7					
Midline	Young	20.789	20.737	21.569	20.695	17.474	
	Old	23.167	24.389	25.200	25.212	24.113	
(Language and Cognitive)	p-value	**0.003**	**0.000**	**0.000**	**0.000**	**0.000**	
		UHP Language Level 8					
Midline	Young	22.159	21.852	23.397	21.873		
	Old	23.650	24.618	25.417	24.946		
(Language and Cognitive)	p-value	0.091	**0.000**	**0.000**	**0.000**		
		UHP Language Level 9					
Midline	Young	23.750	24.879	23.108			
	Old	25.256	25.579	24.558			
(Language and Cognitive)	p-value	0.074	0.433	**0.003**			
		UHP Language Level 10					
Midline	Young	25.778					
	Old	26.000					
(Language and Cognitive)	p-value	0.802					
		UHP Language Level 11					
Midline	Young	24.333	25.258	23.459			
	Old	24.529	25.667	24.803			
(Language and Cognitive)	p-value	0.852	0.599	**0.004**			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, τ_6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table D.6: Tests of the Mean Differences of Raw Language Denver Score $Z_s(a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Midline Time)[3])

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5	τ_6
				UHP Language Level 2			
Midline	Young	18.333	16.078	16.188	17.913		
	Old	20.278	19.306	18.957	20.152		
(Language)	p-value	**0.000**	**0.000**	**0.000**	**0.000**		
				UHP Language Level 3			
Midline	Young	18.017	15.901	17.068			
	Old	20.146	19.327	19.093			
(Language)	p-value	**0.000**	**0.000**	**0.000**			
				UHP Language Level 4			
Midline	Young	17.786	15.959	17.980			
	Old	19.923	19.182	19.738			
(Language)	p-value	**0.000**	**0.000**	**0.001**			
				UHP Language Level 5			
Midline	Young	16.937	15.517	15.931	17.571		
	Old	19.488	17.667	18.148	19.188		
(Language)	p-value	**0.000**	**0.003**	**0.004**	0.064		
				UHP Language Level 6			
Midline	Young	17.911	18.467	18.023	17.026	16.163	18.902
	Old	20.732	20.147	21.306	20.632	19.579	21.247
(Language)	p-value	**0.000**	**0.002**	**0.000**	**0.000**	**0.000**	**0.000**
				UHP Language Level 7			
Midline	Young	18.895	18.758	19.263	19.105	16.603	
	Old	20.436	21.043	21.463	21.367	20.891	
(Language)	p-value	**0.004**	**0.000**	**0.000**	**0.000**	**0.000**	
				UHP Language Level 8			
Midline	Young	19.773	19.273	20.460	19.634		
	Old	20.600	21.226	21.612	21.268		
(Language)	p-value	0.162	**0.000**	**0.001**	**0.000**		
				UHP Language Level 9			
Midline	Young	20.818	21.303	20.308			
	Old	21.615	21.474	20.942			
(Language)	p-value	0.146	0.779	**0.034**			
				UHP Language Level 10			
Midline	Young	21.778					
	Old	21.800					
(Language)	p-value	0.966					
				UHP Language Level 11			
Midline	Young	21.000	21.516	20.541			
	Old	21.059	21.722	21.211			
(Language)	p-value	0.933	0.672	**0.016**			

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3, 4 or 5 is the children with highest passing rate (according to the level). Levels 2, 5, 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3, 4, 9, and 11 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Level 6 is divided in six groups; τ_1 are children with passing rate zero, G6 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.

2. Within each group, we sort the children based on their monthly ages at the enrollment and generate two equal size subgroups named as "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

D.2 Cognitive

Table D.7: Test of the Condition That $K(s, \ell, a) = K(s, \ell, a')$ for **Cognitive Skill** Using UHP Difficulty Levels (Up to Denver Midline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.000	0.315	0.674	1.000
	Old	0.000	0.307	0.640	1.000
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value		**0.655**	0.079	
	N	136	161	161	103
	Passing Rate Range	[0,0]	[0.125,0.5]	[0.5,0.875]	[1,1]
2	**Age at Enrollment (Months)**				
	Young	13.569	12.497	11.793	11.518
	Old	20.799	18.063	17.986	19.443
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	17.091	16.568	16.402	16.350
	Monthly Age (Old)	21.321	18.281	18.375	19.797
	Curriculum Age Range Level 2 : [16.25, 22.25]				
	Average Passing Rate				
	Young	0.000	0.500	1.000	
	Old	0.000	0.500	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value				
	N	149	78	133	
	Passing Rate Range	[0,0]	[0.5,0.5]	[1,1]	
3	**Age at Enrollment (Months)**				
	Young	15.270	14.717	14.288	
	Old	19.973	18.844	19.191	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level				
	Monthly Age (Young)	20.850	20.750	20.817	
	Monthly Age (Old)	21.044	20.750	20.927	
	Curriculum Age Range Level 3 : [20.75, 21.5]				
	Average Passing Rate				
	Young	0.000	0.500	1.000	
	Old	0.000	0.500	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value				
	N	194	44	128	
	Passing Rate Range	[0,0]	[0.5,0.5]	[1,1]	
4	**Age at Enrollment (Months)**				
	Young	15.837	15.717	15.027	
	Old	20.636	20.000	20.065	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level				
	Monthly Age (Young)	22.047	22.000	22.061	
	Monthly Age (Old)	22.085	22.000	22.153	
	Curriculum Age Range Level 4 : [22, 22.5]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level).
Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.
4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

Table D.8: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** Using UHP Difficulty Levels (Up to Denver Midline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.000	0.377	0.767	1.000
	Old	0.000	0.311	0.751	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.020**	0.464	
	N	31	114	113	175
	Passing Rate Range	[0,0]	[0.111,0.571]	[0.571,0.889]	[1,1]
5	**Age at Enrollment (Months)**				
	Young	15.938	18.140	17.578	16.131
	Old	23.183	22.923	21.989	22.871
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	23.500	23.377	23.403	23.670
	Monthly Age (Old)	25.183	23.736	23.620	25.658
	Curriculum Age Range Level 5 : [23.25, 33]				
	Average Passing Rate				
	Young	0.000	0.367	0.690	1.000
	Old	0.000	0.344	0.725	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.369	**0.040**	
	N	41	69	69	132
	Passing Rate Range	[0,0]	[0.2,0.5]	[0.6,0.833]	[1,1]
6	**Age at Enrollment (Months)**				
	Young	18.696	20.436	19.814	18.728
	Old	22.528	24.074	24.162	23.893
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	26.250	26.393	26.250	26.290
	Monthly Age (Old)	26.347	26.471	26.500	27.409
	Curriculum Age Range Level 6 : [26.25, 36.25]				
	Average Passing Rate				
	Young	0.000	0.397	0.733	1.000
	Old	0.000	0.347	0.733	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.000**	**0.059**	0.970	**0.000**
	N	87	102	102	130
	Passing Rate Range	[0,0]	[0.111,0.556]	[0.556,0.9]	[1,1]
7	**Age at Enrollment (Months)**				
	Young	15.813	19.408	20.070	16.780
	Old	19.547	23.778	23.672	23.024
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	24.000	24.342	24.105	24.302
	Monthly Age (Old)	24.727	25.239	25.078	26.020
	Curriculum Age Range Level 7 : [24, 33.75]				
	Average Passing Rate				
	Young	0.000	0.000	0.000	0.000
	Old	0.000	0.474	0.610	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.000**	**0.420**	0.651	**1.000**
	N	0	0	0	0
	Passing Rate Range	[63,0]	[38,0.25]	[37,0.5]	[147,1]
8	**Age at Enrollment (Months)**				
	Young	0.000	0.500	0.833	1.000
	Old	19.981	21.197	22.057	18.983
	Test $a = a'$: p-value	**24.043**	**24.408**	**25.383**	**23.726**
	Average Starting Age at Level				
	Monthly Age (Young)	0.000	0.000	0.000	0.000
	Monthly Age (Old)	26.700	26.500	26.500	26.635
	Curriculum Age Range Level 8 : [26.5, 36]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level).
Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.
4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

Table D.9: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z(s,a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Cognitive Level 2			
Midline	Young	20.000	20.151	18.443	17.367
	Old	24.241	23.078	23.143	23.634
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 3			
Midline	Young	21.631	21.698	20.609	
	Old	23.769	23.750	23.043	
(Language and Cognitive)	p-value	**0.001**	**0.008**	**0.000**	
		UHP Cognitive Level 4			
Midline	Young	22.101	21.619	21.407	
	Old	24.286	23.700	23.618	
(Language and Cognitive)	p-value	**0.000**	**0.054**	**0.000**	
		UHP Cognitive Level 5			
Midline	Young	22.786	23.981	22.400	22.333
	Old	25.333	24.240	24.805	24.861
(Language and Cognitive)	p-value	0.113	0.723	**0.000**	**0.000**
		UHP Cognitive Level 6			
Midline	Young	24.105	23.594	25.031	23.230
	Old	24.063	25.344	25.185	25.000
(Language and Cognitive)	p-value	0.976	**0.072**	0.835	**0.000**
		UHP Cognitive Level 7			
Midline	Young	22.026	23.060	24.500	22.271
	Old	23.556	25.585	25.583	24.439
(Language and Cognitive)	p-value	**0.077**	**0.001**	**0.094**	**0.000**
		UHP Cognitive Level 8			
Midline	Young	23.892	24.438	25.294	23.703
	Old	23.950	26.688	25.267	24.803
(Language and Cognitive)	p-value	0.962	**0.053**	0.979	**0.007**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.

4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

Table D.10: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Latent	Category	τ_1	τ_2	τ_3	τ_4
		UHP Cognitive Level 2			
Midline	Young	1.443	1.855	1.753	1.681
	Old	0.933	1.216	1.662	1.565
(Language and Cognitive)	p-value	**0.019**	**0.000**	**0.623**	**0.580**
		UHP Cognitive Level 3			
Midline	Young	1.766	2.097	2.090	
	Old	1.040	1.095	1.759	
(Language and Cognitive)	p-value	**0.001**	**0.000**	**0.078**	
		UHP Cognitive Level 4			
Midline	Young	1.726	2.031	2.057	
	Old	0.935	0.992	1.513	
(Language and Cognitive)	p-value	**0.000**	**0.002**	**0.001**	
		UHP Cognitive Level 5			
Midline	Young	1.664	1.264	1.720	1.835
	Old	0.340	0.244	0.880	0.867
(Language and Cognitive)	p-value	**0.027**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 6			
Midline	Young	1.196	0.553	1.099	1.508
	Old	0.186	0.038	0.763	0.783
(Language and Cognitive)	p-value	**0.016**	**0.084**	0.278	**0.001**
		UHP Cognitive Level 7			
Midline	Young	0.646	0.663	0.170	1.428
	Old	0.333	-0.106	0.507	0.976
(Language and Cognitive)	p-value	0.326	**0.049**	**0.364**	**0.024**
		UHP Cognitive Level 8			
Midline	Young	0.000	0.000	0.000	0.000
	Old	0.000	0.000	0.000	0.000
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.

4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

D.3 Fine Motor

Table D.11: Test of the Condition That $K(s,\ell,a) = K(s,\ell,a')$ for **Fine Motor Skill** Using UHP Difficulty Levels (Up to Denver Midline Age)[3]

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.000	0.551	1.000	0.000
	Old	0.000	0.523	1.000	0.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.315**	**0.000**	
	N	61	185	229	0
	Passing Rate Range	[0,0]	[0.167,0.833]	[1,1]	[0,0]
1	**Age at Enrollment (Months)**				
	Young	12.820	10.809	12.229	0.000
	Old	19.095	15.069	18.342	0.000
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	15.383	12.875	14.492	0.000
	Monthly Age (Old)	19.724	15.742	19.044	0.000
	Curriculum Age Range Level 1: [12.75, 20.5]				
	Average Passing Rate				
	Young	0.000	0.500	1.000	
	Old	0.000	0.500	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	67	61	265	
	Passing Rate Range	[0,0]	[0.5,0.5]	[1,1]	
2	**Age at Enrollment (Months)**				
	Young	15.057	16.507	14.897	
	Old	21.203	20.204	20.020	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level				
	Monthly Age (Young)	21.507	21.250	21.292	
	Monthly Age (Old)	22.047	21.250	21.656	
	Curriculum Age Range Level 2 : [21.75, 22.75]				
	Average Passing Rate				
	Young	0.000	0.439	0.701	
	Old	0.000	0.361	0.729	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	62	101	100	
	Passing Rate Range	[0,0]	[0.167,0.5]	[0.5,0.833]	
3	**Age at Enrollment (Months)**				
	Young	15.718	18.043	18.785	
	Old	20.758	23.020	22.490	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level				
	Monthly Age (Young)	23.750	23.899	23.850	
	Monthly Age (Old)	24.742	24.276	24.045	
	Curriculum Age Range Level 3 : [23.75, 30]				
	Average Passing Rate				
	Young	0.444	1.000	0.000	0.000
	Old	0.505	1.000	0.000	0.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.000**	**0.000**	
	N	40	89	0	0
	Passing Rate Range	[0,0.833]	[1,1]	[0,0]	[0,0]
4	**Age at Enrollment (Months)**				
	Young	23.442	22.596	0.000	0.000
	Old	25.825	26.030	0.000	0.000
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level				
	Monthly Age (Young)	30.517	30.569	0.000	0.000
	Monthly Age (Old)	30.500	30.673	0.000	0.000
	Curriculum Age Range Level 4 : [30.5, 34.5]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level).
Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. Up to midline, children have not start difficulty levels 5–7, therefore, they are not included in this table.

Table D.12: Tests of the Mean Differences of Raw Denver Score $Z(s,a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Fine Motor Level 1			
Midline	Young	18.194	17.476	17.877	
	Old	20.208	19.095	19.722	
(Fine Motor)	p-value	**0.000**	**0.000**	**0.000**	
		UHP Fine Motor Level 2			
Midline	Young	19.281	19.103	19.039	
	Old	20.444	20.040	20.189	
(Fine Motor)	p-value	**0.007**	**0.005**	**0.000**	
		UHP Fine Motor Level 3			
Midline	Young	18.893	20.000	20.073	19.581
	Old	20.240	20.889	20.591	20.507
(Fine Motor)	p-value	**0.003**	**0.014**	**0.110**	**0.000**
		UHP Fine Motor Level 4			
Midline	Young	21.889	20.905		
	Old	20.778	21.243		
(Fine Motor)	p-value	**0.062**	0.286		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.

4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

Table D.13: Tests of the Mean Differences of Latent Denver Score $Z(s, a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Midline Age)[3]

Latent	Category	τ_1	τ_2	τ_3	τ_4
		UHP Fine Motor Level 1			
Midline	Young	1.412	2.022	1.958	
	Old	0.100	0.683	0.192	
(Fine Motor)	p-value	**0.005**	**0.000**	**0.000**	
		UHP Fine Motor Level 2			
Midline	Young	0.631	0.338	0.726	
	Old	0.296	-0.562	0.411	
(Fine Motor)	p-value	0.424	**0.010**	**0.066**	
		UHP Fine Motor Level 3			
Midline	Young	0.585	0.266	0.041	0.619
	Old	0.455	0.487	0.279	0.642
(Fine Motor)	p-value	0.716	0.505	0.493	0.929
		UHP Fine Motor Level 4			
Midline	Young	1.249	0.429		
	Old	0.789	0.583		
(Fine Motor)	p-value	0.460	0.651		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Midline time.

4. Up to midline, children have not start difficulty levels 9–13, therefore, they are not included in this table.

E Robustness Check for Late Entrance

Children enter the program at different ages. The first task they perform in a level may be a higher-order task in that level. We examine how this feature of our data affects our results. Table E.1 tabulates the position at which the children start their first task at each level. For example, there are five tasks at level 3 in the curriculum. We report the number of children at different positions starting the task at each level. For example, 31 children start from the first task at level 3 and 131 children start their first task at first 50% of tasks at level 3. Above level 7, at most 80% of children start their first task at the beginning of the curriculum.

Table E.1: The Number of Children Starting the First Task by Difficulty Level

		Starting the Task at the Position in Curriculum at Each Level			
Level	Ever Attend	First Task	First 30%	First 50%	First 70%
2	449	4	10	97	183
3	392	31	31	131	225
4	407	39	97	137	208
5	278	88	88	137	169
6	686	90	203	321	369
7	691	391	480	614	680
8	685	447	624	685	685
9	617	542	576	605	611
10	512	424	473	493	504
11	651	517	615	638	647

In the following robustness check, we restrict the sample to the children who start their first task at first 50% of the curriculum tasks at each level. We report the test on how to categorize the children $K(s, \ell, a) = K(s, \ell, a') = \tau$ and then conduct a similar age invariance test hypothesis $E(Z(a) \mid K(s, \ell, a) = \tau) = E(Z(a') \mid K(s, \ell, a') = \tau)$. Tables E.5–E.8 show that we can still reject the age invariance assumption for most groups. Age of entry plays only a minor role in our analysis.

E.1 Up to Denver Endline

Table E.2: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.094	0.776		
	Old	0.085	0.786		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.770	0.829		
	N	61	55		
	Latent Skill Range	[0,0.333]	[0.37,117]		
2	**Age at Enrollment (Months)**				
	Young	9.782	9.018		
	Old	11.170	10.250		
	Test $a = a'$: p-value	**0.000**	**0.000**		
	Average Starting Age at Level 2				
	Young	10.609	9.098		
	Old	11.545	10.250		
	Curriculum Age Range Level 2 : [6.75, 20]				
	Average Passing Rate				
	Young	0.000	0.513	1.000	
	Old	0.000	0.542	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.596		
	N	23	72	36	
	Latent Skill Range	[0,0]	[0.2,0.8]	[1,1]	
3	**Age at Enrollment (Months)**				
	Young	9.708	9.769	9.750	
	Old	11.273	11.262	11.304	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 3				
	Young	10.958	10.990	11.432	
	Old	12.000	12.000	12.000	
	Curriculum Age Range Level 3 : [9.5,18.25]				
	Average Passing Rate				
	Young	0.000	0.353	0.652	1.000
	Old	0.000	0.361	0.700	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.797	0.160	
	N	18	56	46	17
	Latent Skill Range	[0,0]	[0.167,0.5]	[0.5,0.833]	[1,1]
4	**Age at Enrollment (Months)**				
	Young	9.458	9.803	9.743	9.364
	Old	11.125	11.208	11.167	11.083
	Test $a = a'$: p-value	**0.002**	**0.000**	**0.000**	**0.007**
	Average Starting Age at Level 4				
	Young	10.354	10.349	10.331	10.273
	Old	11.333	11.681	11.646	11.542
	Curriculum Age Range Level 4 : [10, 18.5]				
	Average Passing Rate				
	Young	0.094	0.641		
	Old	0.085	0.622		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.770	0.717		
	N	61	76		
	Latent Skill Range	[0,0.333]	[0.333,1]		
5	**Age at Enrollment (Months)**				
	Young	9.782	9.731		
	Old	11.170	11.163		
	Test $a = a'$: p-value	**0.000**	**0.000**		
	Average Starting Age at Level 5				
	Young	10.609	10.575		
	Old	11.545	11.576		
	Curriculum Age Range Level 5 : [10.5,15.5]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level).
Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.
4. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.3: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	Average Passing Rate					
	Young	0.000	0.342	0.715	1.000	
	Old	0.000	0.322	0.735	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.370	0.303		
	N	14	117	139	51	
	Latent Skill Range	[0,0]	[0.1,0.5]	[0.5,0.9]	[1,1]	
6	**Age at Enrollment (Months)**					
	Young	11.375	10.855	10.149	11.639	
	Old	15.813	14.859	14.271	15.771	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 6					
	Young	12.000	12.234	11.813	13.009	
	Old	16.250	15.241	15.100	16.250	
	Curriculum Age Range Level 6 : [10.75, 25.25]					
	Average Passing Rate					
	Young	0.225	0.522	0.688	0.834	0.976
	Old	0.226	0.534	0.679	0.824	0.984
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.959	0.231	0.171	0.285	0.187
	N	119	127	129	127	107
	Latent Skill Range	[0,0.417]	[0.417,0.625]	[0.625,0.75]	[0.75,0.917]	[0.917,1]
7	**Age at Enrollment (Months)**					
	Young	12.983	13.133	11.488	12.518	12.090
	Old	20.136	20.032	19.395	20.138	19.440
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7					
	Young	19.546	19.398	19.458	19.496	19.422
	Old	20.979	20.889	20.523	21.069	20.663
	Curriculum Age Range Level 7 : [19.25, 31.5]					
	Average Passing Rate					
	Young	0.335	0.625	0.745	0.861	1.000
	Old	0.281	0.627	0.738	0.872	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.071**	0.731	0.251	**0.138**	
	N	137	137	137	137	137
	Latent Skill Range	[0,0.533]	[0.545,0.688]	[0.688,0.8]	[0.8,1]	[1,1]
8	**Age at Enrollment (Months)**					
	Young	13.471	12.556	12.648	14.070	12.302
	Old	21.358	20.660	21.045	22.524	22.077
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 8					
	Young	22.321	22.220	22.257	22.127	22.465
	Old	23.171	22.828	23.523	24.306	25.404
	Curriculum Age Range Level 8 : [21.75,40.75]					
	Average Passing Rate					
	Young	0.194	0.634	1.000		
	Old	0.193	0.702	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.966	**0.001**			
	N	166	168	271		
	Latent Skill Range	[0,0.5]	[0.5,0.857]	[1,1]		
9	**Age at Enrollment (Months)**					
	Young	13.253	14.815	11.888		
	Old	22.025	21.905	20.213		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 9					
	Young	26.568	27.143	26.643		
	Old	27.049	26.268	27.365		
	Curriculum Age Range Level 9 : [26, 42.75]					

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups;τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.
4. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.4: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.000	0.509	0.789	1.000
	Old	0.000	0.481	0.794	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.275	0.726	
	N	44	96	95	258
	Latent Skill Range	[0,0]	[0.2,0.667]	[0.667,0.889]	[1,1]
10	**Age at Enrollment (Months)**				
	Young	11.455	13.557	16.684	14.065
	Old	17.955	21.688	23.280	22.266
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 10				
	Young	34.886	35.219	34.995	34.709
	Old	34.409	34.771	34.417	34.933
	Curriculum Age Range Level 10 : [26, 39]				
	Average Passing Rate				
	Young	0.334	0.718	1.000	
	Old	0.269	0.739	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.022**	0.123		
	N	185	185	268	
	Latent Skill Range	[0,0.571]	[0.571,0.857]	[1,1]	
11	**Age at Enrollment (Months)**				
	Young	12.958	13.596	12.631	
	Old	21.497	22.085	20.966	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 11				
	Young	26.537	26.080	26.400	
	Old	26.175	26.665	27.532	
	Curriculum Age Range Level 11 : [34, 42.5]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.
4. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.5: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 2				
	Young	26.929	25.471			
Endline	Old	30.708	23.762			
(Language and Cognitive)	p-value	**0.000**	0.123			
		UHP Language Level 3				
	Young	23.273	23.833	24.235		
Endline	Old	22.333	25.625	24.750		
(Language and Cognitive)	p-value	0.515	**0.009**	0.710		
		UHP Language Level 4				
	Young	23.364	24.206	23.560	26.000	
Endline	Old	24.600	24.643	24.400	22.750	
(Language and Cognitive)	p-value	0.587	0.555	0.581	0.262	
		UHP Language Level 5				
	Young	26.929	23.833			
Endline	Old	30.708	24.706			
(Language and Cognitive)	p-value	**0.000**	0.295			
		UHP Language Level 6				
	Young	25.500	24.647	24.830	24.682	
Endline	Old	27.500	29.222	27.957	26.250	
(Language and Cognitive)	p-value	0.412	**0.000**	**0.000**	0.200	
		UHP Language Level 7				
	Young	26.822	27.278	25.698	26.250	24.897
Endline	Old	29.413	31.958	31.311	31.341	30.471
(Language and Cognitive)	p-value	**0.023**	**0.000**	**0.000**	**0.000**	**0.000**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.6: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 8				
	Young	26.942	27.000	26.322	28.000	25.339
Endline	Old	29.333	31.333	32.586	32.300	30.622
(Language and Cognitive)	p-value	**0.025**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 9				
	Young	27.613	29.016	25.111		
Endline	Old	31.246	32.589	30.394		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Language Level 10				
	Young	25.556	27.977	30.860	27.636	
Endline	Old	28.300	29.744	32.806	32.120	
(Language and Cognitive)	p-value	0.171	0.122	**0.009**	**0.000**	
		UHP Language Level 11				
	Young	26.929	27.620	26.009		
Endline	Old	30.708	32.247	30.968		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.7: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	UHP Language Level 2					
	Young	1.197	0.885			
Endline	Old	0.673	1.365			
(Language and Cognitive)	p-value	0.107	0.313			
	UHP Language Level 3					
	Young	1.300	1.436	1.335		
Endline	Old	0.574	0.687	1.038		
(Language and Cognitive)	p-value	0.187	**0.009**	0.504		
	UHP Language Level 4					
	Young	1.311	1.257	1.267	0.246	
Endline	Old	-0.399	0.773	1.569	1.625	
(Language and Cognitive)	p-value	**0.033**	0.138	0.511	0.307	
	UHP Language Level 5					
	Young	1.197	1.348			
Endline	Old	0.673	0.974			
(Language and Cognitive)	p-value	0.107	0.242			
	UHP Language Level 6					
	Young	0.631	0.711	0.960	0.933	
Endline	Old	-0.840	-1.114	-0.719	-0.226	
(Language and Cognitive)	p-value	0.132	**0.000**	**0.000**	**0.019**	
	UHP Language Level 7					
	Young	-0.481	-0.363	0.418	0.036	0.838
Endline	Old	-2.490	-2.276	-2.103	-2.162	-1.689
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.8: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 8				
	Young	-0.560	0.066	-0.312	-0.551	0.556
Endline	Old	-2.279	-2.307	-2.569	-2.546	-1.945
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 9				
	Young	-0.784	-0.993	0.517		
Endline	Old	-2.762	-2.523	-1.807		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Language Level 10				
	Young	0.061	-0.786	-1.910	-0.632	
Endline	Old	-1.649	-2.410	-2.754	-2.483	
(Language and Cognitive)	p-value	**0.009**	**0.000**	**0.001**	**0.000**	
		UHP Language Level 11				
	Young	-0.317	-0.674	0.214		
Endline	Old	-2.387	-2.624	-2.045		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). levels 7 and 8 are divided in 5 equally sized groups sorted by the passing rate.
Levels 9, and 11 are divided in three groups. For Levels 9 and 11: τ_3 are children with passing rate 1, and τ_1, and τ_2 are equally divided according to the rest sample.
Level 10 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.9: Tests of the Mean Differences of Raw Language Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Language Level 2			
Endline	Young	22.662	21.941		
	Old	25.403	20.450		
(Language)	p-value	**0.000**	**0.037**		
		UHP Language Level 3			
Endline	Young	20.273	20.619	20.941	
	Old	20.000	21.813	21.375	
(Language)	p-value	**0.753**	**0.004**	**0.623**	
		UHP Language Level 4			
Endline	Young	20.364	20.658	20.857	22.143
	Old	21.400	21.214	21.000	20.000
(Language)	p-value	**0.460**	**0.287**	**0.853**	**0.294**
		UHP Language Level 5			
Endline	Young	22.662	20.683		
	Old	25.403	21.235		
(Language)	p-value	**0.000**	**0.298**		
		UHP Language Level 6			
Endline	Young	22.000	21.347	21.236	21.273
	Old	22.500	24.227	23.149	22.125
(Language)	p-value	**0.762**	**0.000**	**0.000**	**0.286**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.10: Tests of the Mean Differences of Raw Language Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 7				
Endline	Young	22.644	22.818	21.962	22.019	21.439
	Old	24.304	26.104	25.600	25.804	25.000
(Language)	p-value	**0.036**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 8				
Endline	Young	22.712	22.644	22.474	23.203	21.643
	Old	24.286	25.907	26.625	26.489	25.109
(Language)	p-value	**0.032**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 9				
Endline	Young	23.302	24.307	21.472		
	Old	25.932	26.365	25.010		
(Language)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Language Level 10				
Endline	Young	21.833	23.233	25.429	23.122	
	Old	23.500	24.487	26.973	26.310	
(Language)	p-value	0.197	0.119	**0.004**	**0.000**	
		UHP Language Level 11				
Endline	Young	22.662	23.077	22.073		
	Old	25.403	26.360	25.426		
(Language)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 4,6 and 10 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_2, and τ_3 are equally divided by sample size. Level 3, 9 and 11 are divided in three groups. Levels 3 is constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest. Levels 9 and 11 are constructed as follows: τ_3 are children with passing rate one, and τ_1, and τ_2 are equally divided by sample size. Levels 2 and 5 are constructed as follows: τ_1, and τ_2 are equally divided by sample size. Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.11: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
	Average Passing Rate				
	Young	0.000	0.325	0.671	1.000
	Old	0.000	0.278	0.672	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.014**	0.977	
	N	52	147	146	63
	Latent Skill Range	[0,0]	[0.07,184]	[0,224]	[0,0]
2	**Age at Enrollment (Months)**				
	Young	12.385	11.564	10.459	10.721
	Old	16.952	16.656	15.654	16.371
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 2				
	Young	16.692	16.522	16.435	16.404
	Old	17.260	17.087	16.784	17.017
	Curriculum Age Range Level 2 : [16.25, 22.25]				
	Average Passing Rate				
	Young	0.000	0.500	1.000	
	Old	0.000	0.500	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	140	111	162	
	Latent Skill Range	[0,0]	[0.5,0.5]	[1,1]	
3	**Age at Enrollment (Months)**				
	Young	12.803	11.777	11.574	
	Old	18.792	17.550	17.451	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 3				
	Young	20.750	20.750	20.750	
	Old	20.750	20.750	20.750	
	Curriculum Age Range Level 3 : [20.75, 21.5]				
	Average Passing Rate				
	Young	0.000	0.500	1.000	
	Old	0.000	0.500	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	210	81	156	
	Latent Skill Range	[0,0]	[0.5,0.5]	[1,1]	
4	**Age at Enrollment (Months)**				
	Young	13.229	10.982	11.481	
	Old	19.580	18.113	17.970	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 4				
	Young	22.000	22.000	22.000	
	Old	22.000	22.000	22.000	
	Curriculum Age Range Level 4 : [22, 22.5]				
	Average Passing Rate				
	Young	0.355	0.786	1.000	
	Old	0.329	0.781	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.324	0.658	**0.000**	
	N	195	206	208	
	Latent Skill Range	[0,0.6]	[0.6,0.9]	[1,1]	
5	**Age at Enrollment (Months)**				
	Young	13.636	12.786	11.871	
	Old	21.962	20.042	19.827	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 5				
	Young	23.444	23.415	23.451	
	Old	23.563	23.497	23.705	
	Curriculum Age Range Level 5 : [23.25, 33]				

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_1, τ_2, and τ_3 are equally divided by sample size. Levels 3,4,5,6,8,9 10,11 and 12 divided in three groups. Levels 3 4 9 10 11 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 5,6 and 8 are constructed as follows: τ_3 correspond to children with passing rate one, τ_2, and τ_1 are equally divided by sample size. Level 13 does not have enough observations.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.12: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	Average Passing Rate					
	Young	0.423	0.783	1.000		
	Old	0.416	0.800	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.070			
	N	181	184	224		
	Latent Skill Range	[0,0.667]	[0.667,0.857]	[1,1]		
6	**Age at Enrollment (Months)**					
	Young	13.655	14.185	11.703		
	Old	22.302	21.431	19.750		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 6					
	Young	26.287	26.266	26.321		
	Old	26.282	26.277	26.327		
	Curriculum Age Range Level 6 : [26.25, 36.25]					
	Average Passing Rate					
	Young	0.230	0.552	0.733	0.891	1.000
	Old	0.211	0.545	0.733	0.883	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.453	0.497	0.972	0.280	
	N	132	134	135	134	125
	Latent Skill Range	[0,0.429]	[0.429,0.636]	[0.667,0.8]	[0.8,1]	[1,1]
7	**Age at Enrollment (Months)**					
	Young	13.037	13.257	12.894	12.685	12.583
	Old	21.789	21.216	21.039	20.331	22.151
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7					
	Young	24.423	24.283	24.303	24.330	24.472
	Old	24.746	24.591	24.719	24.442	25.524
	Curriculum Age Range Level 7 : [24, 33.75]					
	Average Passing Rate					
	Young	0.358	0.771	1.000		
	Old	0.328	0.771	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.289	1.000			
	N	194	199	251		
	Latent Skill Range	[0,0.667]	[0.667,0.857]	[1,1]		
8	**Age at Enrollment (Months)**					
	Young	12.675	14.111	12.570		
	Old	21.454	22.000	21.208		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 8					
	Young	26.869	26.841	27.028		
	Old	26.861	26.742	27.479		
	Curriculum Age Range Level 8 : [26.5, 36]					
	Average Passing Rate					
	Young	0.000	0.500	1.000		
	Old	0.000	0.500	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value					
	N	70	91	274		
	Latent Skill Range	[0,0]	[0.5,0.5]	[1,1]		
9	**Age at Enrollment (Months)**					
	Young	11.514	13.467	14.274		
	Old	20.393	21.239	22.232		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 9					
	Young	33.250	33.250	33.250		
	Old	33.250	33.250	33.250		
	Curriculum Age Range Level 9 : [33.25, 36.5]					

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_1, τ_2, and τ_3 are equally divided by sample size. Levels 3,4,5,6,8,9 10,11 and 12 divided in three groups. Levels 3 4 9 10 11 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 5,6 and 8 are constructed as follows: τ_3 correspond to children with passing rate one, τ_2, and τ_1 are equally divided by sample size. Level 13 does not have enough observations.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.13: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Cognitive Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3
	Average Passing Rate			
	Young	0.000	0.515	1.000
	Old	0.000	0.507	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.810	
	N	58	115	237
	Latent Skill Range	[0,0]	[0.25,0.75]	[1,1]
10	**Age at Enrollment (Months)**			
	Young	12.850	16.309	15.166
	Old	19.393	23.367	22.797
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 10			
	Young	37.050	37.029	37.073
	Old	37.054	37.032	37.099
	Curriculum Age Range Level 10 : [37, 42.5]			
	Average Passing Rate			
	Young	0.000	0.497	1.000
	Old	0.000	0.576	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		**0.011**	
	N	36	180	130
	Latent Skill Range	[0,0]	[0.167,0.833]	[1,1]
11	**Age at Enrollment (Months)**			
	Young	12.542	15.367	16.465
	Old	19.736	22.784	23.610
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 11			
	Young	38.153	38.041	38.102
	Old	38.181	38.024	38.042
	Curriculum Age Range Level 11 : [38, 42.25]			
	Average Passing Rate			
	Young	0.000	0.510	1.000
	Old	0.000	0.576	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.049	
	N	26	68	138
	Latent Skill Range	[0,0]	[0.333,0.667]	[1,1]
12	**Age at Enrollment (Months)**			
	Young	14.946	16.486	17.236
	Old	23.063	23.129	23.924
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 12			
	Young	40.500	40.500	40.500
	Old	40.500	40.500	40.500
	Curriculum Age Range Level 12 : [40.5, 42.75]			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_1, τ_2, and τ_3 are equally divided by sample size. Levels 3,4,5,6,8,9 10,11 and 12 divided in three groups. Levels 3 4 9 10 11 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 5,6 and 8 are constructed as follows: τ_3 correspond to children with passing rate one, τ_2, and τ_1 are equally divided by sample size. Level 13 does not have enough observations.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.14: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Cognitive Level 2				
Endline	Young	25.579	25.873	24.589	24.375	
	Old	29.524	29.157	28.218	27.556	
(Language and Cognitive)	p-value	**0.010**	**0.000**	**0.000**	**0.002**	
		UHP Cognitive Level 3				
Endline	Young	26.677	26.063	25.254		
	Old	30.128	29.533	29.146		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 4				
Endline	Young	26.868	25.161	25.364		
	Old	30.566	30.219	29.194		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 5				
Endline	Young	27.065	26.788	25.783		
	Old	31.547	31.671	30.438		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 6				
Endline	Young	27.351	27.565	25.413		
	Old	31.108	32.423	30.621		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 7				
Endline	Young	27.035	26.898	27.000	26.352	26.000
	Old	29.909	32.255	32.118	31.102	30.714
(Language and Cognitive)	p-value	**0.006**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 8				
Endline	Young	26.913	28.011	25.878		
	Old	30.662	32.686	30.632		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level).
Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_1, τ_2, and τ_3 are equally divided by sample size. Levels 3,4,5,6,8,9 10,11 and 12 divided in three groups. Levels 3 4 9 10 11 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 5,6 and 8 are constructed as follows: τ_3 correspond to children with passing rate one, τ_2, and τ_1 are equally divided by sample size. Level 13 does not have enough observations.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

Table E.15: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3
	UHP Cognitive Level 9			
Endline	Young	24.593	26.842	28.063
	Old	29.417	31.649	32.205
(Language and Cognitive)	p-value	**0.003**	**0.000**	**0.000**
	UHP Cognitive Level 10			
Endline	Young	26.292	30.364	28.934
	Old	28.556	31.976	32.398
(Language and Cognitive)	p-value	0.125	**0.079**	**0.000**
	UHP Cognitive Level 11			
Endline	Young	27.533	29.658	29.862
	Old	29.636	32.368	31.630
(Language and Cognitive)	p-value	0.283	**0.000**	**0.022**
	N	44	102	203
	UHP Cognitive Level 12			
Endline	Young	27.538	30.767	31.066
	Old	30.091	32.367	32.208
(Language and Cognitive)	p-value	0.324	0.141	**0.053**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level).
Level 2 is divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate one. τ_1, τ_2, and τ_3 are equally divided by sample size. Levels 3,4,5,6,8,9 10,11 and 12 divided in three groups. Levels 3 4 9 10 11 12 are constructed as follows: τ_1 correspond to children with passing rate zero, τ_3 are children with passing rate one, and τ_2 are the rest.
Levels 5,6 and 8 are constructed as follows: τ_3 correspond to children with passing rate one, τ_2, and τ_1 are equally divided by sample size. Level 13 does not have enough observations.
Finally, levels 7 and 8 are divided in 5 groups with equal sizes.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

Table E.16: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Cognitive Level 2				
Endline	Young	0.025	0.212	1.067	1.100	
	Old	-1.857	-1.419	-0.946	-0.455	
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	
		UHP Cognitive Level 3				
Endline	Young	-0.215	0.237	0.598		
	Old	-2.150	-1.456	-1.238		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 4				
Endline	Young	-0.384	0.438	0.598		
	Old	-2.143	-1.875	-1.164		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 5				
Endline	Young	-0.645	-0.055	0.355		
	Old	-2.589	-2.283	-1.898		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 6				
Endline	Young	-0.702	-0.518	0.399		
	Old	-2.514	-2.518	-1.821		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Cognitive Level 7				
Endline	Young	-0.481	-0.240	-0.339	0.005	0.375
	Old	-2.397	-2.493	-2.410	-2.189	-1.984
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 8				
Endline	Young	-0.441	-0.542	0.251		
	Old	-2.503	-2.588	-2.014		
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

Table E.17: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3
		UHP Cognitive Level 9		
Endline	Young	0.289	-0.595	-0.693
	Old	-2.310	-2.368	-2.511
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 10		
Endline	Young	-0.223	-1.959	-1.138
	Old	-1.935	-2.564	-2.635
(Language and Cognitive)	p-value	**0.000**	**0.007**	**0.000**
		UHP Cognitive Level 11		
Endline	Young	-0.067	-1.681	-1.369
	Old	-2.259	-2.682	-2.541
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**
	N	44	102	203
		UHP Cognitive Level 12		
Endline	Young	-1.225	-2.068	-1.946
	Old	-2.567	-2.704	-2.553
(Language and Cognitive)	p-value	**0.015**	**0.017**	**0.001**

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 5, 6, 7 and 8 are divided in four groups; τ_1 are children with passing rate zero, τ_4 are children with passing rate 1, τ_2, and τ_3 are equally divided according to the rest sample. Levels 3 and 4 are divided in three groups, and are constructed as follows: τ_1 correspond to children with passing rate zero, τ_2 are children with passing rate one and τ_2 are the rest.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

Table E.18: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Fine Motor Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
	Average Passing Rate					
	Young	0.000	0.364	0.734	1.000	
	Old	0.000	0.381	0.714	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.622	0.355		
	N	15	65	79	83	
	Latent Skill Range	[0,0]	[0.167,0.5]	[0.5,0.833]	[1,1]	
1	**Age at Enrollment (Months)**					
	Young	10.361	10.659	10.456	9.858	
	Old	13.958	13.594	12.949	12.801	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 1					
	Monthly Age (Young)	12.917	12.860	12.900	13.040	
	Monthly Age (Old)	14.250	14.000	13.544	13.635	
	Curriculum Age Range Level 1: [12.75, 20.5]					
	Average Passing Rate					
	Young	0.000	0.500	1.000		
	Old	0.000	0.500	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value					
	N	51	90	314		
	Latent Skill Range	[0,0]	[0.5,0.5]	[1,1]		
2	**Age at Enrollment (Months)**					
	Young	12.655	12.862	12.016		
	Old	19.364	19.372	18.493		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 2					
	Monthly Age (Young)	21.250	21.250	21.250		
	Monthly Age (Old)	21.250	21.250	21.250		
	Curriculum Age Range Level 2 : [21.75, 22.75]					
	Average Passing Rate					
	Young	0.111	0.510	0.701	0.814	1.000
	Old	0.167	0.501	0.690	0.815	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.038**	0.558	0.201	0.755	0.000
	N	97	102	103	104	221
	Latent Skill Range	[0,0.333]	[0.4,0.667]	[0.667,0.8]	[0.8,0.833]	[1,1]
3	**Age at Enrollment (Months)**					
	Young	13.236	14.132	13.086	13.532	11.765
	Old	21.850	21.967	20.438	20.342	19.789
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 3					
	Monthly Age (Young)	23.846	23.908	23.877	23.805	24.069
	Monthly Age (Old)	24.128	24.150	23.875	23.974	24.201
	Curriculum Age Range Level 3 : [23.75, 30]					
	Average Passing Rate					
	Young	0.351	0.770	1.000		
	Old	0.388	0.796	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.446	**0.022**			
	N	97	109	366		
	Latent Skill Range	[0,0.667]	[0.667,0.833]	[1,1]		
4	**Age at Enrollment (Months)**					
	Young	13.486	13.715	13.293		
	Old	22.436	21.654	21.643		
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**		
	Average Starting Age at Level 4					
	Monthly Age (Young)	30.630	30.570	30.621		
	Monthly Age (Old)	30.512	30.519	30.572		
	Curriculum Age Range Level 4 : [30.5, 34.5]					

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Levels 2, 4, 5, 6 and 7 are divided in three groups. Level 2 and 7 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 4, 5, 6 are constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 1 is constructed as: τ_4 are children with passing rate 1, and the rest are divided into 3 equally sized groups. Level 3 is constructed as: τ_5 are children with passing rate 1, and the rest are divided into 4 equally sized groups.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.19: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Fine Motor Skill** using UHP Difficulty Levels (Up to Denver Endline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3
	Average Passing Rate			
	Young	0.250	0.607	1.000
	Old	0.250	0.576	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.115	
	N	66	74	233
	Latent Skill Range	[0,0.5]	[0.5,0.667]	[1,1]
5	**Age at Enrollment (Months)**			
	Young	14.287	15.250	14.985
	Old	21.273	22.393	22.811
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 5			
	Monthly Age (Young)	36.250	36.250	36.250
	Monthly Age (Old)	36.250	36.250	36.250
	Curriculum Age Range Level 5 : [26.25, 36.25]			
	Average Passing Rate			
	Young	0.148	0.615	1.000
	Old	0.226	0.637	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.081**	0.428	
	N	67	68	182
	Latent Skill Range	[0,0.5]	[0.5,0.75]	[1,1]
6	**Age at Enrollment (Months)**			
	Young	14.778	14.603	16.605
	Old	22.306	22.566	23.716
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 6			
	Monthly Age (Young)	38.792	38.824	38.809
	Monthly Age (Old)	38.895	38.809	38.806
	Curriculum Age Range Level 6 : [24, 33.75]			
	Average Passing Rate			
	Young	0.000	0.486	1.000
	Old	0.000	0.516	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.393	
	N	27	68	137
	Latent Skill Range	[0,0]	[0.333,0.667]	[1,1]
7	**Age at Enrollment (Months)**			
	Young	17.656	15.479	17.210
	Old	23.136	23.500	23.713
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7			
	Monthly Age (Young)	40.500	40.500	40.500
	Monthly Age (Old)	40.500	40.500	40.500
	Curriculum Age Range Level 7 : [24, 33.75]			

1. Groups are categorized by the passing rate for each skill by level. τ_1 is for the children with lowest passing rate and τ_3 or τ_4 is for the children with highest passing rate (according to the level). Levels 2, 4, 5, 6 and 7 are divided in three groups. Level 2 and 7 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 4, 5, 6 are constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 1 is constructed as: τ_4 are children with passing rate 1, and the rest are divided into 3 equally sized groups. Level 3 is constructed as: τ_5 are children with passing rate 1, and the rest are divided into 4 equally sized groups.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Endline time.

Table E.20: Tests of the Mean Differences of Raw Denver Score $Z_s(a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Fine Motor Level 1				
Endline	Young	21.000	20.813	20.486	19.968	
	Old	21.833	22.111	22.034	21.360	
(Fine Motor)	p-value	**0.156**	**0.004**	**0.000**	**0.001**	
		UHP Fine Motor Level 2				
Endline	Young	21.524	21.326	21.383		
	Old	23.300	23.125	23.126		
(Fine Motor)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Fine Motor Level 3				
Endline	Young	21.605	22.044	21.467	22.111	21.116
	Old	23.778	23.938	23.842	23.800	23.013
(Fine Motor)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Fine Motor Level 4				
Endline	Young	21.727	21.959	21.746		
	Old	23.813	23.955	23.631		
(Fine Motor)	p-value	**0.000**	**0.000**	**0.000**		
		UHP Fine Motor Level 5				
Endline	Young	22.481	22.833	22.495		
	Old	23.679	23.963	23.965		
(Fine Motor)	p-value	**0.006**	**0.000**	**0.000**		
		UHP Fine Motor Level 6				
Endline	Young	22.724	23.103	22.951		
	Old	23.640	24.161	24.015		
(Fine Motor)	p-value	**0.025**	**0.001**	**0.000**		
		UHP Fine Motor Level 7				
Endline	Young	23.533	23.000	23.207		
	Old	23.300	23.897	24.091		
(Fine Motor)	p-value	0.746	**0.005**	**0.000**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 4, 5, 6 and 7 are divided in three groups. Level 2 and 7 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 4, 5, 6 are constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 1 is constructed as: τ_4 are children with passing rate 1, and the rest are divided into 3 equally sized groups. Level 3 is constructed as: τ_5 are children with passing rate 1, and the rest are divided into 4 equal size groups.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equally sized subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

Table E.21: Tests of the Mean Differences of Latent Denver Score $Z_s(a)$ Conditional Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Endline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Latent	Category	τ_1	τ_2	τ_3	τ_4	τ_5
			UHP Fine Motor Level 1			
Endline	Young	1.321	0.174	0.416	-0.011	
	Old	0.539	0.850	0.834	-0.111	
(Fine Motor)	p-value	0.165	**0.080**	0.246	0.760	
			UHP Fine Motor Level 2			
Endline	Young	0.362	0.452	0.409		
	Old	0.174	-0.094	0.278		
(Fine Motor)	p-value	0.683	**0.071**	0.443		
			UHP Fine Motor Level 3			
Endline	Young	0.292	0.307	0.280	0.779	0.363
	Old	-0.104	-0.279	0.296	0.206	0.155
(Fine Motor)	p-value	0.180	**0.033**	0.956	**0.032**	0.262
			UHP Fine Motor Level 4			
Endline	Young	0.319	0.755	0.362		
	Old	-0.129	-0.061	0.128		
(Fine Motor)	p-value	0.178	**0.001**	**0.095**		
			UHP Fine Motor Level 5			
Endline	Young	0.558	0.642	0.569		
	Old	-0.173	-0.116	0.021		
(Fine Motor)	p-value	**0.087**	**0.018**	**0.001**		
			UHP Fine Motor Level 6			
Endline	Young	0.337	0.587	0.463		
	Old	-0.516	0.202	0.208		
(Fine Motor)	p-value	**0.027**	0.222	0.155		
			UHP Fine Motor Level 7			
Endline	Young	0.477	0.175	0.394		
	Old	-0.796	-0.187	0.055		
(Fine Motor)	p-value	**0.097**	0.199	**0.069**		

1. Groups are categorized by the passing rate for each skill by level. τ_1 is the children with lowest passing rate and τ_3 or τ_4 is the children with highest passing rate (according to the level). Levels 2, 4, 5, 6 and 7 are divided in three groups. Level 2 and 7 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 4, 5, 6 are constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 1 is constructed as: τ_4 are children with passing rate 1, and the rest are divided into 3 equally sized groups. Level 3 is constructed as: τ_5 are children with passing rate 1, and the rest are divided into 4 equal size groups.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equally sized subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. All the measures in the table are evaluated from the time of enrollment to Up to Denver Endline time.

E.2 Up to Denver Midline

Table E.22: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3
2	**Average Passing Rate**			
	Young	0.107	0.562	0.910
	Old	0.089	0.553	0.894
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.669	0.839	0.627
	N	33	32	32
	Latent Skill Range	[0, 0.333]	[0.333, 0.75]	[0.778, 1]
	Age at Enrollment (Months)			
	Young	9.206	8.797	9.078
	Old	10.250	10.063	10.250
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 2			
	Young Age	9.221	8.891	9.125
	Old Age	10.250	10.125	10.250
	Curriculum Age Range for Level 2: [6.75, 20]			
3	**Average Passing Rate**			
	Young	0.148	0.592	0.941
	Old	0.098	0.599	0.977
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.219	0.855	0.176
	N	44	43	44
	Latent Skill Range	[0, 0.333]	[0.333, 0.75]	[0.75, 1]
	Age at Enrollment (Months)			
	Young	9.716	9.534	9.557
	Old	11.000	10.881	11.011
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 3			
	Young Age	10.977	10.636	10.864
	Old Age	12.000	12.000	12.000
	Curriculum Age Range for Level 3: [9.5, 18.25]			
4	**Average Passing Rate**			
	Young	0.133	0.474	0.809
	Old	0.165	0.468	0.838
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.442	0.811	0.521
	N	46	45	46
	Latent Skill Range	[0, 0.333]	[0.333, 0.6]	[0.6, 1]
	Age at Enrollment (Months)			
	Young	9.478	9.435	9.511
	Old	10.739	10.966	10.750
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 4			
	Young Age	10.348	10.217	10.196
	Old Age	11.043	11.409	11.152
	Curriculum Age Range for Level 4: [10, 18.5]			
5	**Average Passing Rate**			
	Young	0.051	0.382	0.761
	Old	0.014	0.388	0.761
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.065	0.854	1.000
	N	46	45	46
	Latent Skill Range	[0, 0.167]	[0.2, 0.5]	[0.5, 1]
	Age at Enrollment (Months)			
	Young	9.587	9.750	9.424
	Old	10.859	10.932	10.783
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 5			
	Young Age	10.630	10.576	10.630
	Old Age	11.174	11.295	11.163
	Curriculum Age Range for Level 5: [10.5, 15.5]			

1. Groups are categorized by the passing rate for each skill by level. Quantile τ_1 is for the children with lowest passing rate and quantile τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equally sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-$\tau_4$are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table E.23: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age,[4] Starting at First 50% Task in Curriculum at Each Level)—Continuous

Level	Category	τ_1	τ_2	τ_3	τ_4	τ_5
6	**Average Passing Rate**					
	Young	0	0.246	0.534	0.756	1.000
	Old	0	0.242	0.506	0.768	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.778	0.145	0.478	
	N	38	76	76	76	55
	Latent Skill Range	[0, 0]	[0.143, 0.333]	[0.333, 0.667]	[0.667, 0.857]	[1, 1]
	Age at Enrollment (Months)					
	Young	10.088	10.842	9.954	10.362	11.089
	Old	14.514	14.329	14.382	14.428	15.602
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 6					
	Young Age	11.625	12.355	11.421	12.039	12.518
	Old Age	15.111	14.711	15.000	15.224	16.250
	Curriculum Age Range for Level 6: [10.75, 25.25]					
7	**Average Passing Rate**					
	Young	0.053	0.380	0.604	0.828	1.000
	Old	0.085	0.366	0.581	0.822	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.038**	0.336	0.063	0.723	
	N	111	110	110	110	110
	Latent Skill Range	[0, 0.25]	[0.25, 0.5]	[0.5, 0.7]	[0.7, 1]	[1, 1]
	Age at Enrollment (Months)					
	Young	12.366	14.314	15.150	14.282	11.218
	Old	19.055	19.809	21.336	20.755	18.245
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7					
	Young Age	19.406	19.355	19.373	19.286	19.336
	Old Age	20.450	20.586	21.786	21.395	20.286
	Curriculum Age Range for Level 7: [19.25, 31.5]					
8	**Average Passing Rate**					
	Young	0.000	0.298	0.520	0.737	1
	Old	0.000	0.305	0.528	0.771	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.578	0.519	**0.004**	
	N	98	83	83	83	141
	Latent Skill Range	[0, 0]	[0.167, 0.4]	[0.4, 0.667]	[0.667, 0.857]	[1, 1]
	Age at Enrollment (Months)					
	Young	15.026	16.560	16.565	18.054	15.683
	Old	20.699	21.720	21.500	23.976	23.479
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 8					
	Young Age	22.148	22.012	22.202	22.083	22.130
	Old Age	22.893	22.848	22.707	25.177	25.761
	Curriculum Age Range for Level 8: [21.75, 40.75]					

1. Groups are categorized by the passing rate for each skill by level. Quantile τ_1 is for the children with lowest passing rate and quantile τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equally sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-$\tau_4$are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table E.24: Test of $K(s,\ell,a) = K(s,\ell,a')$ for **Language Skill** using UHP Difficulty Levels (Up to Denver Midline Age,[4] Starting at First 50% Task in Curriculum at Each Level)—Continuous

Level	Category	τ_1	τ_2	τ_3
9	**Average Passing Rate**			
	Young	0.000	0.500	1
	Old	0.000	0.500	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value			
	N	92	62	131
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]
	Age at Enrollment (Months)			
	Young	19.707	19.363	18.508
	Old	23.701	23.016	22.738
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 9			
	Young Age	26.283	26.250	26.280
	Old Age	26.304	26.250	26.281
	Curriculum Age Range for Level 9: [26, 42.75]			
10	**Average Passing Rate**			
	Young	0.818		
	Old	1		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.172		
	N	21		
	Latent Skill Range	[0, 1]		
	Age at Enrollment (Months)			
	Young	25.955		
	Old	27.775		
	Test $a = a'$: p-value	**0.000**		
	Average Starting Age at Level 10			
	Young Age	34.250		
	Old Age	34.250		
	Curriculum Age Range for Level 10: [26, 39]			
11	**Average Passing Rate**			
	Young	0.000	0.530	1
	Old	0.000	0.521	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.795	
	N	73	56	160
	Latent Skill Range	[0, 0]	[0.333, 0.75]	[1, 1]
	Age at Enrollment (Months)			
	Young	19.101	22.170	18.528
	Old	22.500	24.563	23.728
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 11			
	Young Age	25.750	25.750	25.750
	Old Age	26.458	26.661	27.506
	Curriculum Age Range for Level 11: [34, 42.5]			

1. Groups are categorized by the passing rate for each skill by level. Quantile τ_1 is for the children with lowest passing rate and quantile τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equally sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-$\tau_4$are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table E.25: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Midline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 2				
Midline	Young	16.000	17.857	16.462		
	Old	17.333	16.867	15.429		
(Language and Cognitive)	p-value	0.388	0.564	0.504		
		UHP Language Level 3				
Midline	Young	16.579	16.150	15.100		
	Old	18.286	16.842	15.450		
(Language and Cognitive)	p-value	0.150	0.468	0.617		
		UHP Language Level 4				
Midline	Young	15.476	15.409	17.524		
	Old	17.095	17.100	17.727		
(Language and Cognitive)	p-value	0.142	0.093	0.880		
		UHP Language Level 5				
Midline	Young	15.286	16.435	16.476		
	Old	16.550	17.850	16.571		
(Language and Cognitive)	p-value	0.208	0.184	0.922		
		UHP Language Level 6				
Midline	Young	16.600	18.765	16.594	15.500	17.923
	Old	21.765	23.030	21.727	20.647	20.565
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.011**
		UHP Language Level 7				
Midline	Young	20.660	20.540	21.078	21.104	16.880
	Old	23.204	23.542	25.087	24.449	22.277
(Language and Cognitive)	p-value	**0.002**	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Language Level 8				
Midline	Young	21.976	21.667	21.735	24.231	21.828
	Old	23.721	24.622	24.559	25.757	24.651
(Language and Cognitive)	p-value	**0.047**	**0.000**	**0.001**	**0.004**	**0.000**
		UHP Language Level 9				
Midline	Young	23.707	24.923	22.983		
	Old	25.190	25.346	24.534		
(Language and Cognitive)	p-value	0.078	0.623	**0.002**		
		UHP Language Level 10				
Midline	Young	25.778				
	Old	26.000				
(Language and Cognitive)	p-value	0.802				
		UHP Language Level 11				
Midline	Young	24.333	25.480	23.458		
	Old	24.529	25.333	24.767		
(Language and Cognitive)	p-value	0.852	0.845	**0.005**		

1. Groups are categorized by the passing rate for each skill by level. Quantile τ_1 is for the children with lowest passing rate and quantile τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equally sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-$\tau_4$are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table E.26: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z(s,a)$ Conditional on Language τ Groups by Difficulty Levels (Up to Denver Midline Age,[4] Starting at First 50% Task in Curriculum at Each Level)

Latent Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
		UHP Language Level 2				
Midline	Young	1.218	1.459	0.734		
	Old	1.658	1.649	1.057		
(Language and Cognitive)	p-value	0.240	0.641	0.218		
		UHP Language Level 3				
Midline	Young	1.611	1.579	1.206		
	Old	1.781	1.563	1.141		
(Language and Cognitive)	p-value	0.680	0.956	0.791		
		UHP Language Level 4				
Midline	Young	1.468	1.168	0.995		
	Old	1.408	1.740	1.794		
(Language and Cognitive)	p-value	0.861	**0.041**	**0.019**		
		UHP Language Level 5				
Midline	Young	1.258	1.589	1.443		
	Old	1.533	1.553	1.455		
(Language and Cognitive)	p-value	0.316	0.920	0.970		
		UHP Language Level 6				
Midline	Young	0.984	2.072	1.705	1.174	1.659
	Old	2.029	1.899	2.250	1.876	1.933
(Language and Cognitive)	p-value	**0.002**	0.528	**0.010**	**0.000**	0.381
		UHP Language Level 7				
Midline	Young	1.579	1.713	1.827	2.131	1.584
	Old	1.243	0.830	0.795	0.989	1.750
(Language and Cognitive)	p-value	0.175	**0.000**	**0.000**	**0.000**	0.429
		UHP Language Level 8				
Midline	Young	1.704	1.878	1.394	1.612	1.878
	Old	0.883	0.792	0.651	0.264	1.018
(Language and Cognitive)	p-value	**0.001**	**0.000**	**0.017**	**0.000**	**0.000**
		UHP Language Level 9				
Midline	Young	0.922	0.809	1.493		
	Old	0.042	0.887	0.958		
(Language and Cognitive)	p-value	**0.001**	0.822	**0.008**		
		UHP Language Level 10				
Midline	Young	0.689				
	Old	0.206				
(Language and Cognitive)	p-value	0.385				
		UHP Language Level 11				
Midline	Young	0.686	0.504	1.351		
	Old	0.354	-0.093	0.897		
(Language and Cognitive)	p-value	0.244	0.071	**0.023**		

1. Groups are categorized by the passing rate for each skill by level. Quantile τ_1 is for the children with lowest passing rate and quantile τ_3, τ_4 or τ_5 is for the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equally sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-$\tau_4$are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.
4. All the measures in the table are evaluated from the time of enrollment to the Denver Midline time.

Table E.27: Tests of the Mean Differences of Raw Language Denver Score $Z_s(a)$ Conditional on Language τ Groups by Difficulty Levels (Starting at First 50% Task in Curriculum at Each Level) (Up to Denver Midline Time) [3])

Denver	Category	τ_1	τ_2	τ_3	τ_4	τ_5
			UHP Language Level 2			
Midline	Young	16.000	17.000	15.308		
	Old	15.929	16.067	15.857		
(Language)	p-value	0.951	0.436	0.635		
			UHP Language Level 3			
Midline	Young	15.737	15.750	14.600		
	Old	17.476	16.684	15.450		
(Language)	p-value	**0.045**	0.215	0.181		
			UHP Language Level 4			
Midline	Young	15.333	15.273	16.650		
	Old	16.000	16.850	16.739		
(Language)	p-value	0.426	0.054	0.926		
			UHP Language Level 5			
Midline	Young	14.857	16.000	15.476		
	Old	16.050	17.333	16.273		
(Language)	p-value	0.125	0.087	0.292		
			UHP Language Level 6			
Midline	Young	15.650	17.576	16.300	15.378	17.000
	Old	19.529	20.176	19.382	18.618	18.875
(Language)	p-value	**0.000**	**0.000**	**0.000**	**0.000**	**0.009**
			UHP Language Level 7			
Midline	Young	18.720	18.667	19.080	18.938	16.460
	Old	20.163	20.872	21.188	20.894	20.104
(Language)	p-value	**0.009**	**0.000**	**0.000**	**0.000**	**0.000**
			UHP Language Level 8			
Midline	Young	19.675	19.333	19.471	20.795	19.641
	Old	20.614	21.184	21.030	21.811	21.079
(Language)	p-value	0.112	**0.000**	**0.003**	**0.004**	**0.000**
			UHP Language Level 9			
Midline	Young	20.902	21.269	20.237		
	Old	21.476	21.462	20.948		
(Language)	p-value	0.296	0.742	**0.017**		
			UHP Language Level 10			
Midline	Young	21.778				
	Old	21.800				
(Language)	p-value	0.966				
			UHP Language Level 11			
Midline	Young	21.000	21.520	20.528		
	Old	21.059	21.667	21.205		
(Language)	p-value	0.933	0.755	**0.015**		

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3, 4 or 5 is the children with highest passing rate (according to the level). Levels 2-5, 9, and 11 are divided in three groups. Levels 2-5 and are separated into three equal-sized groups based on the passing rates. Levels 9 and 11 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 7 is divided in 5 groups with equal sizes. Finally, Levels 6 and 8 are divided in five groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-τ_4 are equally divided according to the rest sample.
2. Within each group, we sort the children based on their monthly ages at the enrollment and generate two equal size subgroups named as "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.
3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.28: Test Condition $K(s,\ell,a) = K(s,\ell,a')$ for Cognitive Skill by Enrollment Age Groups and Task Difficulty Levels (Up to Denver Midline Age, Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
2	**Average Passing Rate**				
	Young	0.042	0.372	0.641	0.952
	Old	0.071	0.345	0.624	0.951
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.057	0.167	0.359	0.925
	N	101	101	100	101
	Latent Skill Range	[0, 0.2]	[0.2, 0.5]	[0.5, 0.8]	[0.8, 1]
	Age at Enrollment (Months)				
	Young	11.577	11.690	11.425	10.431
	Old	16.847	16.729	16.215	15.885
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 2				
	Young Age	16.514	16.500	16.377	16.377
	Old Age	17.179	17.149	16.831	16.920
	Curriculum Age Range for Level 2: [16.25, 22.25]				
3	**Average Passing Rate**				
	Young	0	0.500	1.000	
	Old	0	0.500	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	110	78	113	
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]	
	Age at Enrollment (Months)				
	Young	14.686	14.442	13.754	
	Old	18.941	18.378	18.049	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 3				
	Young Age	20.750	20.750	20.750	
	Old Age	20.750	20.750	20.750	
	Curriculum Age Range for Level 3: [20.75, 21.5]				
4	**Average Passing Rate**				
	Young	0	0.500	1.000	
	Old	0	0.500	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	169	44	101	
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]	
	Age at Enrollment (Months)				
	Young	15.485	15.648	14.711	
	Old	20.071	19.875	19.090	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 4				
	Young Age	22.000	22.000	22.000	
	Old Age	22.000	22.000	22.000	
	Curriculum Age Range for Level 4: [22, 22.5]				
5	**Average Passing Rate**				
	Young	0.139	0.545	0.820	1
	Old	0.169	0.511	0.789	1
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.287	0.107	0.081	
	N	83	82	83	145
	Latent Skill Range	[0, 0.333]	[0.333, 0.667]	[0.667, 0.889]	[1, 1]
	Age at Enrollment (Months)				
	Young	17.327	17.311	17.667	15.987
	Old	22.768	21.902	21.800	21.561
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 5				
	Young Age	23.375	23.299	23.464	23.497
	Old Age	23.573	23.628	23.550	23.754
	Curriculum Age Range for Level 5: [23.25, 33]				

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 3, 4, 6, and 8 are divided in three groups. Levels 3, 4, and 8 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 6 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 2 is divided in 4 groups with equal sizes. Levels 5 and 7 are divided in four groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-τ_3 are equally divided according to the rest sample. Finally, level 9 is divided into 2 groups where τ_1 contains children with passing rate zero and τ_2 are children with passing rate one

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.29: Test Condition $K(s,\ell,a) = K(s,\ell,a')$ for Cognitive Skill by Enrollment Age Groups and Task Difficulty Levels-Continuous (Up to Denver Midline Age, Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
6	**Average Passing Rate**				
	Young	0.125	0.654	1.000	
	Old	0.189	0.650	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	0.058	0.871		
	N	87	87	115	
	Latent Skill Range	[0, 0.4]	[0.4, 0.833]	[1, 1]	
	Age at Enrollment (Months)				
	Young	19.313	19.932	18.440	
	Old	23.244	23.901	22.333	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 6				
	Young Age	26.267	26.273	26.284	
	Old Age	26.273	26.308	26.316	
	Curriculum Age Range for Level 6: [26.25, 36.25]				
7	**Average Passing Rate**				
	Young	0.000	0.418	0.738	1.000
	Old	0.026	0.413	0.749	1.000
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value	**0.001**	0.828	0.561	
	N	96	96	96	123
	Latent Skill Range	[0, 0.143]	[0.167, 0.6]	[0.6, 0.9]	[1, 1]
	Age at Enrollment (Months)				
	Young	15.885	19.339	20.082	16.780
	Old	20.526	23.563	23.659	22.424
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 7				
	Young Age	24.063	24.321	24.109	24.302
	Old Age	24.703	24.988	25.030	25.527
	Curriculum Age Range for Level 7: [24, 33.75]				
8	**Average Passing Rate**				
	Young	0.000	0.525	1.000	
	Old	0.000	0.552	1.000	
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value		0.417		
	N	62	74	147	
	Latent Skill Range	[0, 0]	[0.25, 0.833]	[1, 1]	
	Age at Enrollment (Months)				
	Young	19.613	21.466	18.983	
	Old	22.847	24.649	23.726	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 8				
	Young Age	26.694	26.500	26.635	
	Old Age	26.718	27.081	27.459	
	Curriculum Age Range for Level 8: [26.5, 36]				
9	**Average Passing Rate**				
	Young	0.000	1.000		
	Old	0.000	1.000		
	Test $K(s,\ell,a) = K(s,\ell,a')$: p-value				
	N	9	34		
	Latent Skill Range	[0, 0]	[1, 1]		
	Age at Enrollment (Months)				
	Young	24.250	24.441		
	Old	25.125	27.426		
	Test $a = a'$: p-value	**0.047**	**0.000**		
	Average Starting Age at Level 9				
	Young Age	33.250	33.250		
	Old Age	33.250	33.250		
	Curriculum Age Range for Level 9: [33.25, 36.5]				

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 3, 4, 6, and 8 are divided in three groups. Levels 3, 4, and 8 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 6 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 2 is divided in 4 groups with equal sizes. Levels 5 and 7 are divided in four groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-τ_3 are equally divided according to the rest sample. Finally, level 9 is divided into 2 groups where τ_1 contains children with passing rate zero and τ_2 are children with passing rate one

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.30: Tests of the Mean Differences of Raw Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Midline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Cognitive Level 2			
Midline	Young	18.292	18.592	18.275	16.600
	Old	22.727	22.125	22.314	21.400
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 3			
Midline	Young	21.360	21.595	20.115	
	Old	23.891	23.500	22.723	
(Language and Cognitive)	p-value	**0.001**	**0.011**	**0.000**	
		UHP Cognitive Level 4			
Midline	Young	21.703	21.550	20.957	
	Old	23.986	23.667	23.333	
(Language and Cognitive)	p-value	**0.000**	**0.050**	**0.000**	
		UHP Cognitive Level 5			
Midline	Young	23.167	22.462	23.071	22.324
	Old	24.026	25.139	24.767	24.433
(Language and Cognitive)	p-value	0.374	**0.001**	**0.002**	**0.000**
		UHP Cognitive Level 6			
Midline	Young	23.842	25.053	22.980	
	Old	24.463	24.972	24.588	
(Language and Cognitive)	p-value	0.494	0.911	**0.001**	
		UHP Cognitive Level 7			
Midline	Young	22.214	22.980	24.480	22.271
	Old	23.744	25.500	25.625	24.280
(Language and Cognitive)	p-value	0.058	**0.001**	0.092	**0.000**
		UHP Cognitive Level 8			
Midline	Young	25.036	24.533	23.703	
	Old	22.828	26.121	24.803	
(Language and Cognitive)	p-value	0.053	**0.041**	**0.007**	
		UHP Cognitive Level 9			
Midline	Young	25.800	25.188		
	Old	26.667	25.600		
(Language and Cognitive)	p-value	0.699	0.586		

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 3, 4, 6, and 8 are divided in three groups. Levels 3, 4, and 8 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 6 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 2 is divided in 4 groups with equal sizes. Levels 5 and 7 are divided in four groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-τ_3 are equally divided according to the rest sample. Finally, level 9 is divided into 2 groups where τ_1 contains children with passing rate zero and τ_2 are children with passing rate one

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.31: Tests of the Mean Differences of Latent Language and Cognitive Denver Score $Z_s(a)$ Conditional on Cognitive τ Groups by Difficulty Levels (Up to Denver Midline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Cognitive Level 2			
Midline	Young	1.576	1.711	1.709	1.607
	Old	1.565	1.768	2.132	1.839
(Language and Cognitive)	p-value	0.964	0.778	0.062	0.252
		UHP Cognitive Level 3			
Midline	Young	1.736	2.054	2.073	
	Old	1.207	1.318	1.859	
(Language and Cognitive)	p-value	**0.033**	**0.002**	0.281	
		UHP Cognitive Level 4			
Midline	Young	1.859	2.039	2.078	
	Old	1.014	1.034	1.710	
(Language and Cognitive)	p-value	**0.000**	**0.003**	**0.038**	
		UHP Cognitive Level 5			
Midline	Young	1.208	1.594	1.887	1.862
	Old	0.178	0.643	0.892	1.051
(Language and Cognitive)	p-value	**0.000**	**0.000**	**0.000**	**0.000**
		UHP Cognitive Level 6			
Midline	Young	0.820	1.069	1.511	
	Old	0.138	0.669	1.095	
(Language and Cognitive)	p-value	**0.012**	0.139	0.064	
		UHP Cognitive Level 7			
Midline	Young	1.723	0.836	1.229	1.986
	Old	0.898	0.379	0.250	1.282
(Language and Cognitive)	p-value	**0.002**	0.059	**0.000**	**0.001**
		UHP Cognitive Level 8			
Midline	Young	0.755	0.528	1.428	
	Old	0.325	0.140	0.976	
(Language and Cognitive)	p-value	0.155	0.147	**0.024**	
		UHP Cognitive Level 9			
Midline	Young	-0.147	0.469		
	Old	0.127	0.334		
(Language and Cognitive)	p-value	0.766	0.759		

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 3, 4, 6, and 8 are divided in three groups. Levels 3, 4, and 8 are constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 6 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 2 is divided in 4 groups with equal sizes. Levels 5 and 7 are divided in four groups; τ_1 are children with passing rate zero, τ_5 are children with passing rate one. τ_2-τ_3 are equally divided according to the rest sample. Finally, level 9 is divided into 2 groups where τ_1 contains children with passing rate zero and τ_2 are children with passing rate one

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.32: Test Condition $K(s, \ell, a) = K(s, \ell, a')$ for Fine Motor Skill by Enrollment Age Groups and Task Difficulty Levels (Up to Denver Midline Age, Starting at First 50% Task in Curriculum at Each Level)

Level	Category	τ_1	τ_2	τ_3	τ_4
1	**Average Passing Rate**				
	Young	0.223	0.702	1.000	
	Old	0.304	0.699	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value	**0.040**	0.896		
	N	78	77	87	
	Latent Skill Range	[0, 0.5]	[0.5, 0.833]	[1, 1]	
	Age at Enrollment (Months)				
	Young	10.122	10.474	9.835	
	Old	13.295	12.849	12.587	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 1				
	Young Age	12.865	12.827	13.091	
	Old Age	13.750	13.539	13.552	
	Curriculum Age Range for Level 1: [12.75, 20.5]				
2	**Average Passing Rate**				
	Young	0	0.500	1.000	
	Old	0	0.500	1.000	
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value				
	N	44	61	228	
	Latent Skill Range	[0, 0]	[0.5, 0.5]	[1, 1]	
	Age at Enrollment (Months)				
	Young	13.966	16.339	14.441	
	Old	19.364	20.008	19.107	
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	
	Average Starting Age at Level 2				
	Young Age	21.250	21.250	21.250	
	Old Age	21.250	21.250	21.250	
	Curriculum Age Range for Level 2: [21.75, 22.75]				
3	**Average Passing Rate**				
	Young	0.033	0.495	0.729	1.000
	Old	0.132	0.466	0.751	1.000
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value	0.000	0.065	0.157	
	N	85	85	85	130
	Latent Skill Range	[0, 0.333]	[0.333, 0.6]	[0.6, 0.833]	[1, 1]
	Age at Enrollment (Months)				
	Young	16.424	18.115	19.348	16.515
	Old	21.756	23.064	23.112	21.458
	Test $a = a'$: p-value	**0.000**	**0.000**	**0.000**	**0.000**
	Average Starting Age at Level 3				
	Young Age	23.772	23.830	23.875	23.935
	Old Age	24.135	24.236	24.060	24.258
	Curriculum Age Range for Level 3: [23.75, 30]				
4	**Average Passing Rate**				
	Young	0.444	1.000		
	Old	0.505	1.000		
	Test $K(s, \ell, a) = K(s, \ell, a')$: p-value	0.597			
	N	40	86		
	Latent Skill Range	[0, 0.833]	[1, 1]		
	Age at Enrollment (Months)				
	Young	23.442	22.517		
	Old	25.825	25.843		
	Test $a = a'$: p-value	**0.000**	**0.000**		
	Average Starting Age at Level 4				
	Young Age	30.517	30.535		
	Old Age	30.500	30.558		
	Curriculum Age Range for Level 4: [30.5, 34.5]				

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 1 and 2 are divided in three groups. Level 2 is constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 1 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 3 is constructed as: τ_3 are children with passing, and the rest are divided into 3 equally sized groups. Finally, level 9 is divided into 2 groups where τ_2 contains children with passing rate one and τ_1 are the rest of the children.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.33: Tests of the Mean Differences of Raw Fine Motor Denver Score $Z_s(a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Midline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Fine Motor Level 1			
Midline	Young	17.111	17.167	16.923	
	Old	18.500	18.719	18.111	
(Fine Motor)	p-value	**0.000**	**0.000**	**0.003**	
		UHP Fine Motor Level 2			
Midline	Young	19.158	19.111	18.884	
	Old	19.762	19.963	19.948	
(Fine Motor)	p-value	0.290	**0.011**	**0.000**	
		UHP Fine Motor Level 3			
Midline	Young	19.051	19.977	19.958	19.441
	Old	20.389	21.065	21.292	20.295
(Fine Motor)	p-value	**0.001**	**0.004**	**0.000**	**0.001**
		UHP Fine Motor Level 4			
Midline	Young	21.889	20.947		
	Old	20.778	21.256		
(Fine Motor)	p-value	0.062	0.333		

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 1 and 2 are divided in three groups. Level 2 is constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 1 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 3 is constructed as: τ_3 are children with passing, and the rest are divided into 3 equally sized groups. Finally, level 9 is divided into 2 groups where τ_2 contains children with passing rate one and τ_1 are the rest of the children.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.

Table E.34: Tests of the Mean Differences of Latent Fine Motor Denver Score $Z_s(a)$ Conditional on Fine Motor τ Groups by Difficulty Levels (Up to Denver Midline Age,[3] Starting at First 50% Task in Curriculum at Each Level)

Denver	Category	τ_1	τ_2	τ_3	τ_4
		UHP Fine Motor Level 1			
Midline	Young	2.381	2.333	3.264	
	Old	0.963	1.013	1.494	
(Fine Motor)	p-value	**0.000**	**0.001**	**0.000**	
		UHP Fine Motor Level 2			
Midline	Young	0.798	0.304	0.753	
	Old	0.122	-0.461	0.418	
(Fine Motor)	p-value	0.156	**0.029**	0.061	
		UHP Fine Motor Level 3			
Midline	Young	0.499	0.073	0.014	0.688
	Old	0.312	0.733	0.722	0.630
(Fine Motor)	p-value	0.564	0.071	0.080	0.830
		UHP Fine Motor Level 4			
Midline	Young	1.249	0.317		
	Old	0.789	0.630		
(Fine Motor)	p-value	0.460	0.360		

1. Groups are categorized by the passing rate for each skill by level. Group 1 is the children with lowest passing rate and group 3 or 4 is the children with highest passing rate (according to the level). Levels 1 and 2 are divided in three groups. Level 2 is constructed as follows: τ_1 contains children with passing rate zero, τ_3 are children with passing rate one and τ_2 are the rest. Level 1 is constructed as follows: τ_3 are children with passing rate one, and the rest are divided into 2 equally sized groups. Level 3 is constructed as: τ_3 are children with passing, and the rest are divided into 3 equally sized groups. Finally, level 9 is divided into 2 groups where τ_2 contains children with passing rate one and τ_1 are the rest of the children.

2. Within each group, we sort the children based on their monthly ages at enrollment and generate two equal size subgroups named "Young" and "Old." The children whose enrollment ages are in the top 50% are categorized into old group.

3. This table restricts the sample to children who started their first task at first 50% of the curriculum tasks at each level.