Building an Effective, Efficient and Equitable ECE System via Developmental Pathway

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Purpose

From an evaluation standpoint:

- To show the need for and power of viewing ECE system via the developmental pathway
- To demonstrate evaluation results that show the status of the ECE system so far
- To issue a call for working together to build an effective, efficient, and equitable ECE system via developmental pathway (both programming and data utilization)

Supportive Families

The Raising a Reader (RAR) Program

- A successful program in our community with about 1,300 children each year
- Regression analysis indicated that the program raised children's Letter ID by 10 points (out of 56), and sound ID by 3 points (out of 26)
- How did that great result happen? Many factors, one of which is **"Supportive Families"**

How RAR Parents Became More Involved: Read More Often

% of Parents Who Indicated How Often They Were Able to Find Time to Read with Their Children During Pre- and Post-Surveys

Response Categories	Pre%	Post%
Once or twice a month	5.4	1.3
About once a week	12.2	9.8
2 or 3 days a week	35.6	35.7
4 or 5 days a week	20.3	28.6
Everyday	26.6	24.6

*N=226; *p< 0.05*

How RAR Parents Became More Involved: Reading Longer for Each Session

% of Parents/Guardians Who Indicated How Long They Were Able to Read Together: A Comparison Between Pre- and Post-Surveys

Response Categories	Pre %	Post %
2-5 minutes[a]	6.2	2.8
5-10 minutes	30.0	26.7
10-15 minutes	32.9	31.8
15-20 minutes	17.1	22.6
More than 20 minutes	13.8	16.1

*[a] the categories are not mutually exclusive as in the original surveys. **p < .01. N = 219*

How RAR Parents Became More Involved: More Active Literacy Practice

% of Parents Who Agreed with the Statement During Pre- and Post-Surveys

Response Categories	Pre %	Post %	p
My child did not pay much attention to the story	12.8	8.8	0.176
My child quietly listened while I read and/or talked about the book most of the time	50.0	57.1	0.098
I asked my child questions about the story	34.5	63.3	0.000 ***
My child turned the pages of the book	46.9	73.0	0.000 ***
My child asked questions about the book	45.1	73.0	0.000 ***
My child "read" the book to me or told me a story about the pictures	34.1	65.9	0.000 ***

N=226; ***p< 0.001

High Quality Early Childhood Experiences

Purpose: To show how multiple programs could work together to make a "bigger" impact on children, i.e., a mini-system's impact

Sample: Based on a cohort of about 1,200 preschoolers who took the kindergarten readiness test

Programs evaluated: We evaluated the effect of the following programs on kindergarten readiness:

a) ***Home visit***
b) ***Play group visit***
c) ***Raising a Reader/Great Start Readiness Program (RAR/GSRP)***

How We Evaluated the Effects of Various ECE Programs Simultaneously (1)

Absolute effect (single program's effect) on Sound ID points, with control for student background:

- **Home visit, 7.57 points higher**
- **Playgroup visit, 3.98 points higher**
- **RAR/GSRP, 2.81 points higher**

Effect of Programs on MLPP Fall Sound ID Points*

Programs	Absolute Effect	
	Coef.**	p
Home Visit	7.57	.01
Playgroup Visit	3.98	.04
RAR/GSRP	2.81	.00

*All models are controlled for gender, race, special education, free lunch, English language learner, and age. Sound Identification is on a scale of 0 to 26.

** Unstandardized coefficient

How We Evaluated the Effects of Various ECE Programs Simultaneously (2)

Modeling the sequential effect of each program: After controlling for children's background, one program is associated with:

- **6.7 points higher on Letter ID**
- **2.6 points higher on Sound ID**

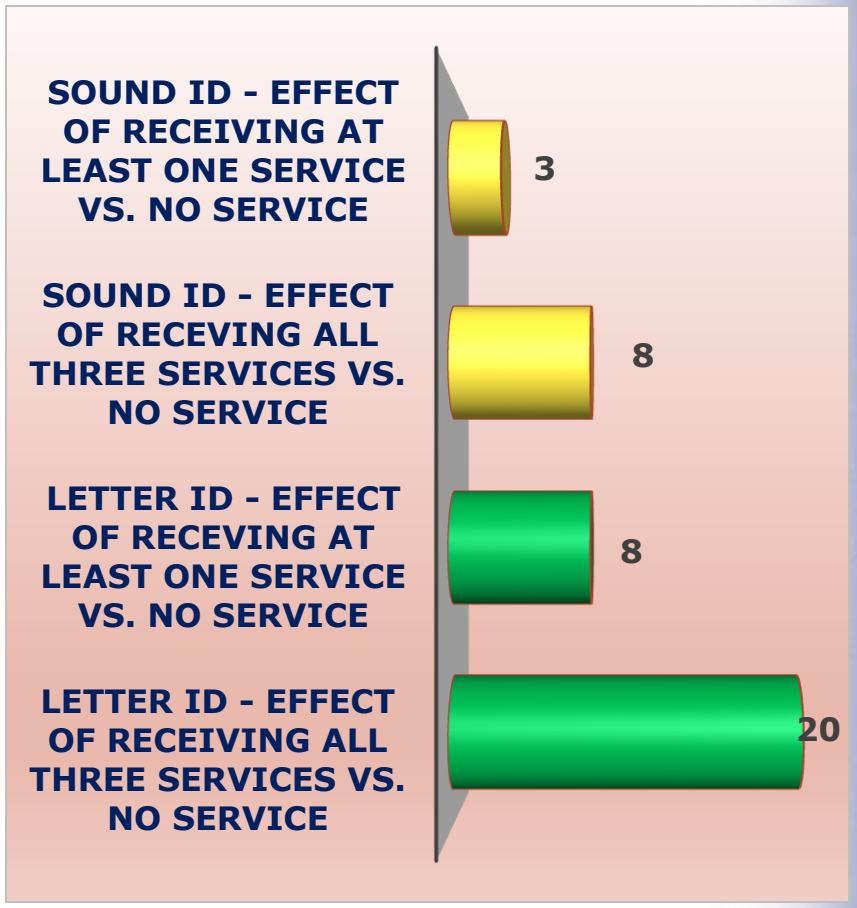
One Program's Sequential Effect on Letter and Sound ID

	Letter ID		Sound ID	
	Coefficient*	P	Coefficient*	P
Special Education (Yes=1)	-5.677	0.000	-3.233	0.000
Free or Reduced-Price Lunch (Yes=1)	-5.859	0.000	-2.576	0.000
Gender (Male=1)	-3.170	0.000	-1.202	0.000
Age	9.226	0.000	5.593	0.000
Race (White=1)	-0.980	0.171	0.159	0.647
Number of programs (from 0 to 3 programs)	**6.737**	**0.000**	**2.565**	**0.000**

How We Evaluated the Effects of Various ECE Programs Simultaneously (3)

- **The cumulative effects of "All three programs vs. no program at all" are much larger than that of "Receiving at least one program vs. no program at all".**
- **The finding points to the cumulative effect of these three programs.**
- **The above conclusion also points to the importance of evaluating from a**

A Comparison between the Effects of Receiving All Three Programs (vs. No Program at All) and Receiving at Least One Program (vs. No Program at All)



Supportive Community

Example 1: Services from non-educational sectors make a difference

Absolute effect (single program's effect) on Sound ID points:

- **Referred to basic services, 3.87 points higher**
- **Referred to community services, 13.58 points higher**
- **Referred to health services, 4.62 points higher**
- **Helping the children in need to achieve equity**

Effect of Programs on MLPP Fall Sound ID Points*

Programs	Absolute Effect	
	Coef.**	p
Referred to Basic Services	3.87	.39
Referred to Community Services	13.58	.12
Referred to Health Services	4.62	.38

*All models are controlled for gender, race, special education, free lunch, English language learner, and age. Sound Identification is on a scale of 0 to 26.

** Unstandardized coefficient

Supportive Community

Example 2: Dual Generation Approach for Cross-sector Impacts

Early Head Start Extended Hours/Weeks Project

- ***Made a positive impact on children's development.*** Children in the intervention group grew more between fall and winter on:
- **(a) literacy scale, effect size = 0.27; p = 0.008**
- **(b) social emotional scale, effect size of 0.17; p = 0.051**
- **(c) language scale, effect size = 0.20; p = 0.066**
- **(d) total score, effect size =0.16., p = 0.073**

Supportive Community

Example 2: Dual Generation Approach for Cross-sector Impacts

Early Head Start Extended Hours/Weeks Project

Improved parents' employment status.

- (a) work with fewer mid-day disruptions (100%);
- (b) able to work more hours (86%); and
- (c) got employment or became more secure in employment (80%)

Supportive Community

Example 2: Dual Generation Approach for Cross-sector Impacts

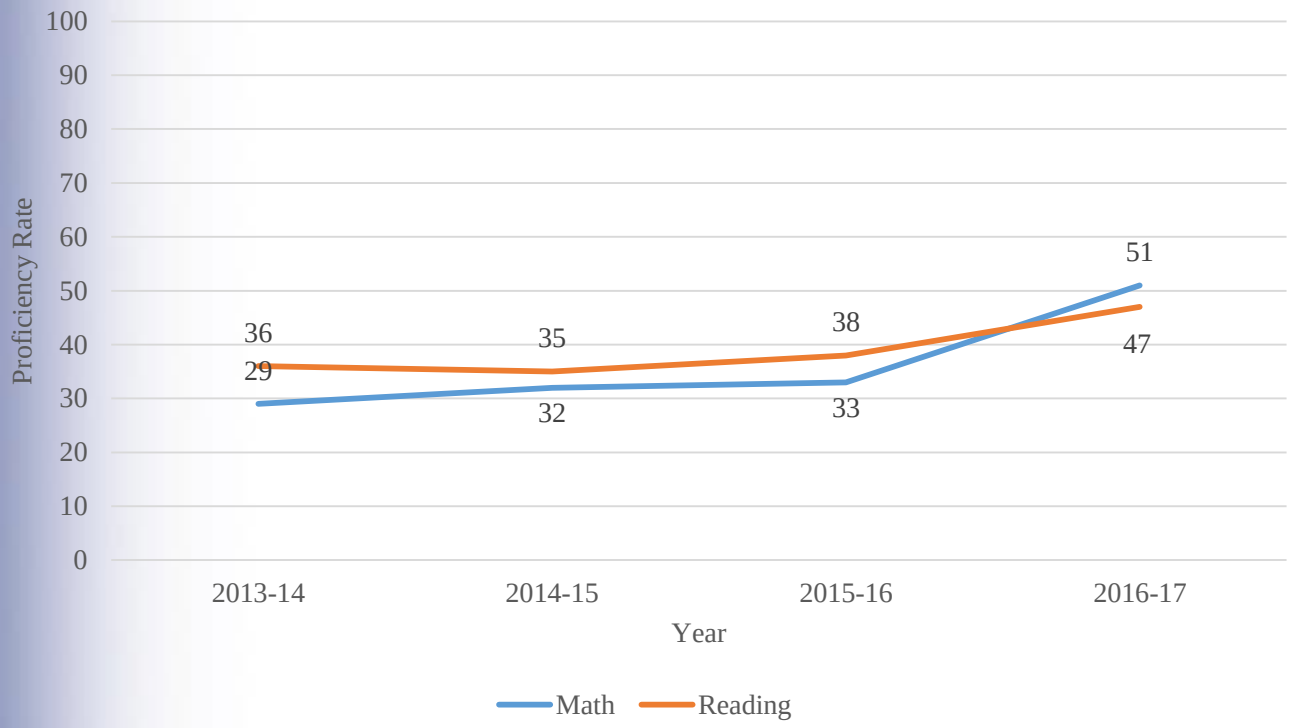
Early Head Start Extended Hours/Weeks Project

Improved parents' involvement in their children's education and their own self-enhancement.

- (a) parents' increased involvement in their children's education (80%);
- (b) involvement in self-improvement activities (80%).

Yes, We Can Build an Effective ECE System!

Percentage of BCPS Kindergarteners Who Reached 50th Percentile in MAP Math and Reading in Spring



Moving into the Future: Develop an Effective ECE System via Developmental Pathway

I have a dream that in the future, we

- **Will know the life history of each child in Battle Creek (i.e., programs);**
- **Will know the effect of the major life experiences on children's outcomes (i.e., data);**
- **Will know the most effective developmental pathway for each child, particularly for those under-resourced children;**
- **Will have an effective, efficient, and equitable pathway to ensure children born healthy, preschool ready, kindergarten ready, and proficient by the third grade.**

Moving into the Future: Develop an Effective ECE System via Developmental Pathway

1. **Work together in terms of both programming and data. Ideally, we should have various and consistent outcomes along the way, for example,**

(a) Ages and Stages assessment at 24-months
(b) Kindergarten readiness
(c) Proficiency rate in math and reading by the third grade

2. Use Unique Identification Codes (UICs) to capture a child's life history (and regress on outcomes) to evaluate the effect of various programs, individually, cumulatively, interactionally, and differentially.

3. Through experimentation and evaluation, develop an inventory of effective and complimentary programs for our children

Another way of testing sequential effects (Letter ID)

	B	P	B	P	B	P	B	P
Age (in years)	6.79	0.00	7.00	0.00	7.12	0.00	7.99	0.00
Free & reduced price lunch	-1.91	0.04	-2.14	0.02	-2.25	0.02	-2.84	0.00
Gender (male vs. female)	-0.21	0.82	-0.17	0.85	-0.24	0.79	-0.24	0.80
Special education	-11.33	0.00	-11.23	0.00	-11.07	0.00	-10.80	0.00
Race (white vs others)	-3.00	0.00	-2.28	0.03	-2.23	0.03	-2.05	0.05
Home Visit			**14.35**	**0.00**	9.45	0.01	8.90	0.02
Playgroup Visit					**5.98**	**0.04**	4.14	0.16
GSRP							4.73	0.00

Another way of testing sequential effects (Sound ID)

	B	P	B	P	B	P	B	P
Age (in years)	4.16	0.00	4.29	0.00	4.36	0.00	4.55	0.00
Free & reduced price lunch	-0.06	0.90	-0.20	0.68	-0.28	0.57	-0.40	0.42
Gender (male vs. female)	-0.06	0.90	-0.04	0.94	-0.08	0.86	-0.08	0.86
Special education	-5.38	0.00	-5.32	0.00	-5.21	0.00	-5.15	0.00
Race (white vs others)	-2.09	0.00	-1.66	0.00	-1.63	0.00	-1.59	0.00
Home Visit			8.56	0.00	5.21	0.01	5.09	0.01
Playgroup Visit					4.09	0.01	3.70	0.02
GSRP							1.00	0.05