Bracken Child School Readiness Assessment Results
HIPPY Red Deer 2016/2017

Participant Details

- Participants included 74 children (32 boys; 42 girls).
- Nine children were refugees; the remaining children were not.
- Of the 69 children for whom we have birthplace data, 41 were born in Canada and 28 were born outside of Canada.
- The ages of the children at the start of the study ranged from 36 to 70 months with a mean age of 54 months.
- All children were participating in one of three levels of the HIPPY program:
  - 31 children in the 3-year-old program (12 boys, 19 girls, mean age =48 months),
  - 25 in the 4-year-old program (15 boys, 10 girls; mean age = 55 months), and
  - 18 in the 5-year-old program (5 boys, 13 girls; mean age = 63 months).
- Time spent in HIPPY ranged from 0.63 to 2.66 years, with the children having spent an average of 1.4 years in the program.

Assessment Dates

- Baseline assessments were completed at the beginning of the program year.
- Follow up assessments were completed at the end of the program year.

Results

Paired sample t-tests comparing baseline subtest raw scores with follow up subtest raw scores in the full sample indicated a significant increase in all areas except Colours (see Table 1).

Table 1:

Sub-test	Year 1 mean	Year 2 mean	T	p
Colours	9.37	9.64	-1.51	=.14
Letters	8.66	11.30	-6.60	<.001
Numbers	10.52	13.67	-6.58	<.001
Size	12.22	16.21	-6.83	<.001
Shape	11.42	14.73	-6.69	<.001
Total	52.19	65.55	-9.36	<.001

These findings indicate **improvement in all areas tested, except Colours.** However, because raw scores were used in the analyses, we don't know if the improvement was simply a result of maturation. To address this issue, we looked at differences between baseline and follow up Total Standard Scores, which are adjusted for age (see Table 2).

Table 2:

	Year1 mean	Year 2 mean	T	p
Total SS	103.35	109.92	-5.03	<.001

As can be seen in Table 2, the mean Total Standard Scores significantly increased from baseline to follow up, lending support to the positive impact of HIPPY participation.

A one-way analysis of variance (ANOVA) revealed differences between refugee and non-refugee children in baseline and follow up Total Standard Scores were not statistically detectable (Table 3).

Table 3:

	Refugee	Non-refugee	
Year 1 Total SS	96.67	103.55	F(1, 72)=1.61 (n.s.)
Year 2 Total SS	101	111.16	F(1, 64)=2.55 (n.s.)
	t=-1.96, p=.09	t =-4.69, p<.001	

The difference between baseline and follow up Total Standard Scores was statistically detectable within the non-refugee group (t =-4.69, p<.001) but not the refugee group (t=-1.96, p=.09), suggesting less improvement over time among the refugee children. However, analyses of the refugee group should be interpreted with caution given its very small size (n=8).

A one-way ANOVA examining differences among children in age 3, 4, and 5 HIPPY program on baseline and follow up Total Standard Scores was also conducted. Results revealed non-significant differences (Table 4).

	HIPPY age 3	HIPPY age 4	HIPPY age 5	
Year 1 Total SS	100	103	106	F(2, 71)=.93 (n.s.)
Year 2 Total SS	107	111	113	F(2, 63)=.73 (n.s.)
	t=-3.13, p=.004	t=-3.05, p=.007	t=-2.49, p=.025	

The difference between baseline and follow up Total Standard Scores was statistically detectable at all HIPPY program levels.

Girls tended to outperform boys at both baseline and follow up. The mean baseline Total Standard Score was higher for girls (105.5) than boys (99) but this difference was not statistically detectable (F(1, 72)=3.43, p=.07). The mean follow up Total Standard Score was also higher for girls (113.6) than boys (104.6) and this difference was statistically detectable (F(1, 64)=4.73, p=.03).

Children who were born in Canada tended to outperform those who were born outside of Canada. The mean baseline Total standard Score was higher for Canadian born children (106.6) than non-Canadian born children (97.4) and this difference was

statistically detectable (F(1, 67)=6.50, p=.01). The mean follow up Total Standard Score was also higher for Canadian born (113.42) than immigrant children (102.91) and this difference was statistically detectable (F(1, 59)=5.57, p=.02).

Mothers' level of English was positively correlated with both baseline Total Standard Scores, r=.39, p=.001, and Year 2 Total standard scores, r=.46, p<.001, indicating that the more proficient in English mothers were, the better their children tended to do.

Bottom line

There are some differences between groups in how well they do on the Bracken. For example, on average girls do better than boys and Canadian born children do better than immigrants. Children whose mothers have good English seem to be at an advantage over children whose mothers don't speak English as well.

However, all children seem to be benefiting equally from participating in HIPPY inasmuch as all groups show similar improvement from baseline to follow up.