How an Innovative Self-Learning Program Improved Primary Eduation Results in Bangladesh?

BEP x Kumon Project Research Team:
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Motivation

"Global learning crisis" (UNESCO 2013, WDR 2018)

MDGs: Impressive progress in the primary completion rate.
SDGs: Inclusive and quality education for all.

Where are Primary School Students Passing Learning Assessments?

Average percentage of students assessed proficient in math & reading assessments by income group and region

■ Mathematics ■ Reading
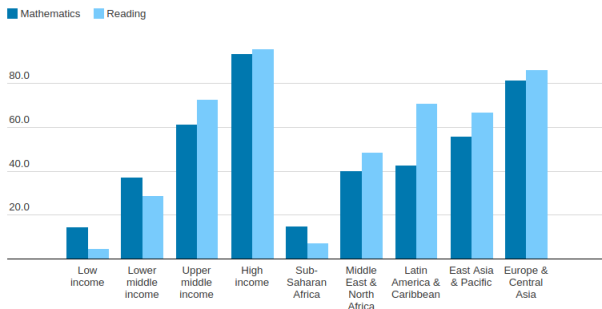
Note: Regional averages exclude high-income countries

Source: World Development Report 2018 using "A Global Data Set on Education Quality" by Altinok, Angrist, and Patrinos 2017

Research Question

What happens to learning if we introduce one of globally successful non-formal education methods KUMON Method of Learning to disadvantaged schools BRAC primary schools (BPS) in very low income communities?

Kumon

Diagnosis test (DT) at the very begining to identify ability level.
Self-learning at the right level, in small-steps with hints.

↑ A Kumon center in India

An example of a worksheet →

2A I I a
Adding 4 Part 1 (Up to 12 + 4)   KUM◯N   2A I I

◆ Add.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

(1) 2 + 3 = 5

(2) 2 + 4 = 6

(3) 1 + 3 = 4

(4) 1 + 4 =

(5) 4 + 3 =

(6) 4 + 4 =

3A I a
Numbers up to 100 Part 1

KUM◯N

Grade Mistakes	A	B	C	D
	1	2-3	4-5	6-11

Name
Date   /   /
Time   :   to   :

3A I

Write the numbers.

1	2	3	4	5	6	7	8	9	10

1	2	3	4	5					

3A71a   KUM◯N   3A 71
Adding 1 Part 1 (Up to 12 + 1)

	A	B	C	D	Name
Grade					Date / /
					Time : to :

◆ Write the number that comes next.

$1 \longrightarrow \boxed{2}$

$2 \longrightarrow \boxed{}$

$3 \longrightarrow \boxed{}$

$4 \longrightarrow \boxed{}$

$6 \longrightarrow \boxed{}$

3A74a   KUM◯N   3A 74
Adding 1 Part 1 (Up to 12 + 1)

	A	B	C	D	Name
Grade					Date / /
					Time : to :

◆ Write the number that comes next.

$2 \longrightarrow \boxed{3}$

$2 + 1 = \boxed{3}$

Two   plus   one   equals   three.

$4 \longrightarrow \boxed{}$

$4 + 1 = \boxed{}$

Four   plus   one   equals

$5 \longrightarrow \boxed{}$
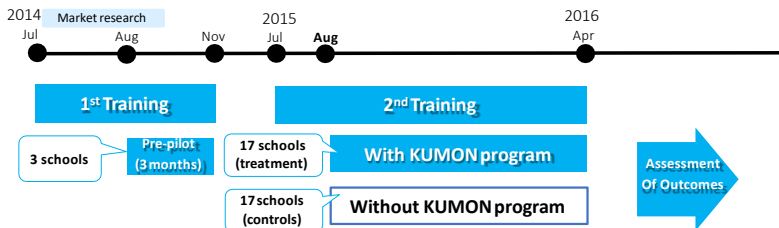
$5 + 1 = \boxed{}$

BRAC Primary School
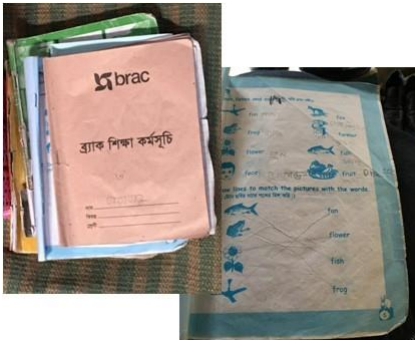
. ↑ BEP uses National Curriculum and Textbook Board (NCTB) textbooks

A BPS in Bangladesh during a Kumon session →

RCT-Based Study Timeline

No.	Name of survey	To whom	The numbers of people*	In charge of the data	2015					2016							...		...	2017
					Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	...	Nov.	...	...	Nov.
1	DT test	Students	About 1,000	KUMON	●								●							
2	PTS II	Students	About 1,000	KUMON	●								●							
3	Quizzes	Students	About 1,000	U-Tokyo			●			●										
4	Teachers' survey	Teachers	34 + 7**	KUMON		●									●					
5	parent guardian survey	Parents	About 1,000 Households	KUMON											●					
6	PSC	Students	226***	U-Tokyo													●			●

\<Study Report\>

| 7 | Monthly Reports | Students | About 500 | KUMON | ←——————————————————→ |
| 8 | Grading books | Students | About 500 | U-Tokyo | ←——————————————————→ |

*For 1-6, the number includes people in the control group.
**Some teachers were replaced at the time of endline.
***Excluding the number of samples planned to collect in 2017.

Results on Cognitive Outcomes

DT Score per Minute(Grade3)
— Treatment — Control
12.22 ***
5.61
4.44
6.77
Baseline   Endline

PTS Score(Grade3)
— Treatment — Control
56.34
47.8 *
34.45
33.04
Baseline   Endline

DT Score per Minute (Grade4)
— Treatment — Control
10.68 ***
4.37
4.42
6.27
Baseline   Endline

PTS Score (Grade4)
— Treatment — Control
60.62 ***
43.77
36.31
47
Baseline   Endline
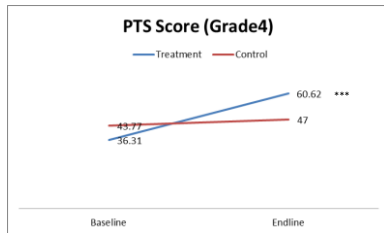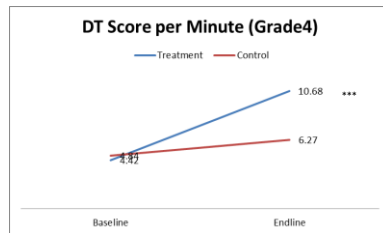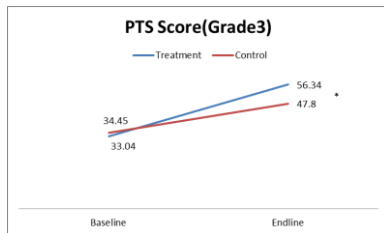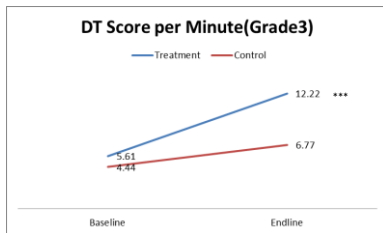
Comparing Benefit and Cost
Benefit-Cost (B-C) Ratio and Internal Rate of Return (IRR) with Minimum Cost

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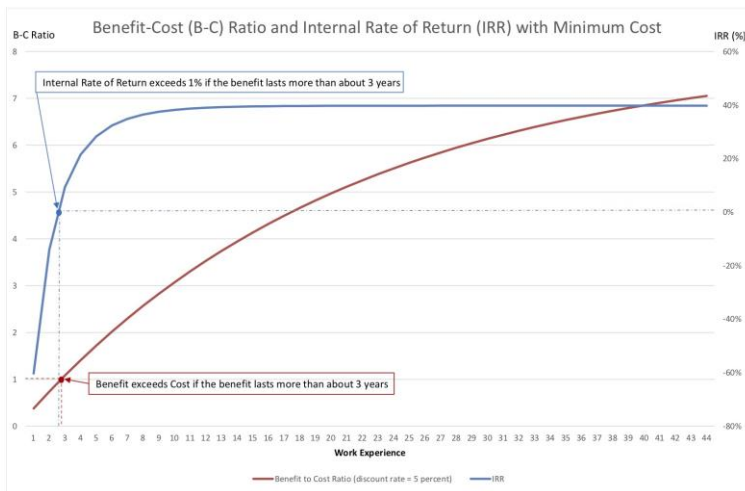
Remarks

Overall impacts:

Robust and better learning ability.

Benefit exceeds cost if the effect continues more than 3-10 years.

Teachers' better assessment capacities of students' performance.

PPP useful for SDGs:

Complementary to lecture-style education in solving learning crisis

Market-tested programs will be effective even in social sectors