SHOWING LIFE OPPORTUNITIES (SLO)

NIMBLE INTERVENTIONS TO ENHANCE THE ONLINE LEARNING PROCESS

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Showing Life Opportunities aimed to deliver online courses in schools in Ecuador to boost opportunity-driven entrepreneurship.

The program consists of online courses on:
• Personal initiative
• Negotiations
• Scientific Thinking and Statistics
• English
• Spanish
We provided the program in 3 phases under different conditions:

Phase 1: Educational Zone 2
Phase 2: National Level (Highlands)
Phase 3: National Level (Coast)

And in each of them we provided assessment of nimble interventions to optimize the delivery of the online program.
PHASE 1: EDUCATIONAL ZONE 2

• We worked with 126 schools in the educational zone 2 of Ecuador.

• Started the intervention on 23rd of September 2019

Challenge:

• It was interrupted by the protests in country for few weeks.

• Program phased-in and we needed to push the take-up.

• The program was supposed to take 3 month, but after 2 month on average only ~22% of the lessons was finished (5.53 lessons out of 25 compulsory lessons)

Source: educacion.gob.ec
We wanted to assess if providing information to teachers can improve take-up

- Peer comparison shown to be effective tool to change behavior (e.g. Allcott 2011, Ferraro and Price 2013; Frey and Meier, 2004; Gerber and Rogers, 2004;)

We randomly selected 108 schools and at random divided them in two groups:

- 54 Control Schools. Teachers do not receive any letter.

- 54 Treatment Schools. Teachers receive benchmarking letter every Monday with information about performance of their classes and other classes.
PHASE 1: COMPLETION OF LESSONS IN THE MIDDLE OF MARCH 2020

• The students on average finished only 18.3 lessons.

• Only 49.2% students finished all compulsory lessons.

• The difference between benchmarking group (19.03 lessons completed, 52.3% students finished the program) compared to control group (17.8 lessons completed, 46.9% students finished the program) is insignificant.
PHASE 1: ADAPTIVE VERSUS STATIC EXERCISES

We randomly divided students in two groups:

2792 students receive static exercises

6804 students receive adaptive exercises

Easy exercises $\rightarrow$ More difficult exercises

Easy exercises $\rightarrow$ Correct Answer?

Yes $\rightarrow$ More difficult exercises

No $\rightarrow$ Same level exercises
PHASE 1: EFFECTS OF THE ADAPTIVE EXERCISES

Students in adaptive exercises group spent 9.4 percentages point more time practicing compared to static exercises group, without significant gains in knowledge.

Results are similar to Klaveren et al. 2017

General Estimation strategy ANCOVA: $Y_{i1} = \beta_0 + \beta_2 A_i + Y_{i0} + controls_{ij} + \epsilon_i$

$= 9,596$ Students
PHASE 1: COMPLETION OF LESSONS IN THE MIDDLE OF MARCH 2020

Note that the difference between groups in take-up is mostly driven by practicing time.

The difference in lessons completed between group with adaptive exercises group (22.7 lessons completed) compared to group with static exercises group (22.5 lessons completed) is small (though significant).
PHASE 2: NATIONAL LEVEL PROGRAM (HIGHLANDS)

• The online program was expanded to national level for remote studying.

• We rolled out the program on 18th of May 2020 to cover 412 schools across country in highlands educational regime.

Challenge:

After two weeks (1st of June), students finish on average only 5.9 lessons, whereas students must have finished 10 lessons to graduate in time on 1st of July 2020.

Source: educacion.gob.ec

The picture used with kind permission from student, parents, and ministry of education of Ecuador.
PHASE 2: MESSAGES TO THE STUDENTS ON PLATFORM

• Group 1. Lottery award. 3973 students get message that they can win lottery if study more

• Group 2. Encouragement group. 4012 students get encouragement message

• Group 3. Team-up. 1975 students get message to team-up in household

• Group 4. Control. 1984 students do not see any of these screens
PHASE 2: EFFECTS OF MESSAGES

General Estimation strategy ANCOVA: \( Y_{i,t} = \beta_0 + \beta_E E_i + \beta_L L_i + \beta_R P_i + Y_{i,t-1} + \text{controls}_{i,t} + \epsilon_i \)

11944 Students
PHASE 2: EFFECT OF LOTTERY ON STUDYING TIME

- We see 4.5 percentage points change in studying time in lottery group compared to control group.
PHASE 2: COMPLETION OF LESSONS ON 1ST OF JULY 2020

- The students finished almost all lessons — 24.54 on average out of 27 compulsory lessons.

- 83.5% of students finished all compulsory lessons.

- Difference between groups in average lessons completion is negligible, ranging from 24.4 in control group to 24.8 in plan and team-up.

- The percentage of students who finished all compulsory lessons ranged from 83.6% in control group to 85% in plan and team-up group.
PHASE 3: NATIONAL LEVEL PROGRAM (COAST)

• Under new “normal” remote education, we rolled out the program on 7th of September 2020 to cover 598 schools across country in the Coastal educational regime.

• Based on the previous experience from Phase 1 (educational zone 2) and phase 2 (highlands), we decided to assess 4 delivery methods.

• We randomly divided 598 schools into the 4 groups.

Source: educacion.gob.ec
PHASE 3: CONTROL GROUP

- 149 Control schools. Business as usual.
PHASE 3: SELF-MANAGEMENT GROUP

• 150 Self-management schools.

• We do not enroll ministry personal.

• We do not provide weekly report.

Note that monitoring system assumes considerable resources (time, effort) from administrative personnel.
PHASE 3: LOTTERY AWARD GROUP

• 149 Schools Lottery Award Schools.

• We send number of emails to students telling them that they can win the lottery each week.

• The more lessons they study **and** better their score on the platform more likely they are to win the lottery.

• We make weekly draws to increase positive spillovers and inform them each week.

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Hello [student_name],

Congratulations! The SLO program has selected you to participate in a lottery:

The more lessons you study and the better your score on the platform, the more likely you are to receive the monetary prize each week.

Remember:
- We will make weekly draws. Your chances of winning depend on your weekly progress on the platform.
- For every lesson you complete and the better your score, the more chances you have of winning the monetary prize. You can retake a lesson if you want to get a better grade - your last attempt will be counted. The goal is for you to learn as much as you can!
- Make sure you win this week and enjoy learning your lessons.

Accept the challenge!

You can complete all your lessons and learn as much as you can from the lessons!

Yours sincerely,

SLO Team
PHASE 3: TEAM-UP GROUP

• 150 Team-up Schools.
• Students are asked to team-up with the classmates to achieve better studying results.

Hello [student_name],

Congratulations! The SLO Program has selected you to meet a challenge:

Join a classmate at a distance to study the SLO project materials and achieve better results in your studies!

Remember, if you study together you can get better results on the course.

What should I do?

- Communicate by WhatsApp, phone, social networks. Avoid in-person interaction.

- Share your progress regularly (every day!), for example, how many hours you study each day, what you have learned, how many hours you want to study in the next few days.

- Help each other and try to discuss the material you find particularly interesting or challenging.

Accept the challenge!

Together you can complete all your lessons and achieve the best learning results!

Yours sincerely,

SLO Team
PHASE 3: EFFECTS OF INTERVENTIONS

General estimation strategy: 

$$Y_{ij} = \beta_0 + \beta_S S + \beta_M L_i + \beta_P P + \text{controls}_{c,j} + \text{Strata}_{k,j} \theta + \epsilon_{c,j}$$

- $j = 498$ of active schools out of 598 assigned; $i = 16,533$ Students
PHASE 3: COMPLETION OF LESSONS ON 15TH OF NOVEMBER 2020

• The students finished almost all lessons – 23.2 on average out of 25 compulsory lessons.

• 80% of students finished all compulsory lessons.

• Difference between groups in average lessons completion is negligible, ranging from 22.9 in control (business as usual) group to 23.5 in team-up group.

• The percentage of students who finished all compulsory lessons ranged from 78.5% in control (business as usual) group to 81.5% in team-up group.
Decrease in performance on subject specific knowledge in self-management group compared to control group ranged from 1 percentage point (Spanish) to 4.7 percentage points (English).
SUMMARY

• We provided an assessment of the set of nimble interventions in different conditions.
• We find that lottery award can increase study time of the students.
• We find that monitoring by administrative personnel can improve observed performance on the knowledge tests.
• Even potentially promising interventions require extensive iterative testing.