2022 LEAP CHALLENGE

LEAP Final Deliverable(s)

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Executive Summary

Introduction

To positively impact student outcomes across Brazil, Curiós have developed and implemented an intervention that aims to work through improving pedagogical co-ordinator (PCs) and teacher capabilities. To help them develop their evidence base of impact, as well as raise more funding and scale up their program, we developed an evaluation toolkit for them that can be used to generate conclusions that are easy to communicate.

Organization's role & strength

Curiós is a Brazilian start-up aiming to improve teacher training in the public sector. Every school has a PC, who is responsible for supporting the continued professional development of the teachers in their school. This is Curiós' point of leverage: by improving the capabilities of the PC, they aim to also increase the impact of teachers on student outcomes. To date, they have worked with over 8,500 PCs across 23 municipalities in Brazil. Their technology based platform is based on a methodology that incorporates the adult learning cycle and encourages individual reflection, collective discussion, practice, refinement and application of the learned strategy into practice. Their values are simplicity, transparency, continuous learning, collective construction, and legacy.

Need summary

Curiós is at an early stage of their journey. They have designed an intervention and successfully implemented it across a range of municipalities in Brazil. However, they are struggling with determining the magnitude of its impact on PCs, as well as for teachers and their ultimate target: improving student outcomes. Crucially, they need a staged approach to building their evidence base evaluating the impact of Curiós, and directions for finding more funding and scaling partners.

Solution summary & next steps

We developed a solution with three parts. The first is a straightforward guide to research design. It outlines the considerations that should be taken into account for a study in their specific context, answers practical questions that might arise during the implementation and even gives a hand-on guide for collecting the data. Overall, we recommend that Curiós partner with an in-country researcher(s) who will be able to support the study's ethical approval and data analysis.

The second is a set of surveys that would be administered during the research, ranging from concrete tests of understanding of the content to commonly used measures of teacher efficacy and well-being that can be compared with other studies.

Third, we sketch directions they can go to find funding and partners when they are equipped with the results of their evaluation. They can also use this part to find other organizations as examples on how to use research results in communications.

Deliverable 1: Research Design

Introduction

Curiós have completed a number of initial pilot studies aiming to evaluate the impact of their CPD programme for pedagogical co-ordinators (PCs) in Brazil. For example, their 2019 pilot in Castro showed a 26 percentage point increase in teachers feeling more respected and less frustrated. There was also a 10 percentage point increase in teachers feeling better able to execute their lesson plans.

While this preliminary evidence is indicative of some success, these initial pilot studies did not include a control group, or outcomes measured before (i.e., pre-test/ Time 1) and after (i.e., post-test/ Time 2) PC's use of the Curiós platform. This limits the strength of and confidence in the conclusions drawn from this preliminary data. As such, Curiós are keen to develop their evidence base of impact for their programme, in ways that build on their previous pilot studies. Based on their theory of change, it is first important to establish the impact of the Curiós platform for PCs, their target users, *before* progressing to other beneficiaries; the teachers trained by PCs, and then students taught by these teachers.

In response to this need, the LEAP team have developed three research designs for how to evaluate the Curiós platform for supporting 'change in practice' for PCs, including in comparison to standard practice (i.e., a control group; Options 2 and 3). The advantages, disadvantages, and considerations needed for each of the three research designs are outlined. The included discussion points are designed to support Curiós in their decision-making process of which approach is most practical and beneficial for them moving forwards.

Deliverable 1: Evaluating 'Change of practice' for Pedagogical Co-ordinators

Aim

To specify a roadmap for how to evaluate 'change in practice' for PCs using Curiós, including in comparison to a control group. This section of the deliverables is focused on research design and three options are presented.

Research question

Does the use of the Curiós platform support a 'change in practice' in the way that PCs work with teachers in the school environment?

Option 1: Existing participants, no control group

Treatment period	Time 1
PCs use Curiós for a specified period of time	PCs complete LEAP survey

What are the advantages of this research design in Option 1?
The main benefit of this approach is that you can work with the PCs who are already using the Curiós platform without the need for additional recruitment. Trialing the survey (see Deliverable 2) with them will give you some initial indication of how PCs are responding to the questions, and as such, some preliminary indications of impact.

However, Option 1 does not necessarily progress the evidence base of Curiós beyond the previous initial pilot studies as there are two important drawbacks.

What are the disadvantages of this research design in Option 1?
The first drawback of this approach is that you will not have a control group. This means that you cannot examine the impact of the Curiós platform, compared to standard practice.

The second drawback is that the PCs will have already had exposure to Curiós, and you do not have a measure of their abilities before this exposure. This means that you cannot say with confidence that the survey results are a direct consequence of the Curiós platform. This can only be achieved with Options 2 or 3, where PCs, who are new to Curiós, complete the survey before and after using the platform.

Option 2: Within-subject design

Time 1	Control period	Time 2	Treatment period	Time 3
PCs complete LEAP survey.	PCs <u>do not</u> use Curiós for a specified period of time.	PCs complete LEAP survey.	PCs use Curiós for the <u>same</u> specified period of time.	PCs complete LEAP survey again.

What are the advantages of this research design in Option 2?
The main benefit of a within-subject design is that you only need one group of PCs. This may be particularly beneficial if you only have access to a relatively small number of PCs when you come to implement this study.

What are the disadvantages of this research design in Option 2?
The main drawback of this design is that it will take longer to implement than Options 1 and 3. Ideally, you want the control period and the treatment period to be the same length of time.

How many PCs will you need to recruit?
Curiós is currently at the stage of further developing the preliminary evidence of their platform with the inclusion of a control group. For this stage of development, the Early Intervention Foundation (n.d.) recommends a *minimum* of 20 participants in each group.

In this design, the PCs are essentially their own control group between Time 1 and Time 2. As such, only 20 PCs would be required for this design.

However, as this is considered a minimum, it would be advantageous to recruit as many PCs that you can and are able to manage.

How many schools will you need to recruit?
Assuming that there is one PC in every school and given that you need to recruit a *minimum* of 20 PCs, you will need to recruit *at least* 20 schools to take part in this study. This will require one municipality, based on the assumption that there are 30 schools in a municipality.

How many municipalities will you need to recruit?
Ideally you would also want all of these schools to be within the *same, one* municipality. This will help minimize any fundamental differences between schools due to high-level factors imposed by the local government.

Option 3: Between-groups design

Time 1	Treatment period		Time 2
PCs complete LEAP survey.	**Randomize PCs to Group**	**Group 1 (Treatment Group):** PCs use Curiós for a specified period of time.	PCs complete LEAP survey again.
		Group 2 (Control Group): A different group of PCs do not use Curiós for the same specified period of time.	PCs complete LEAP survey again.

What are the advantages of this research design in Option 3?
In contrast to Option 2, the main benefit of a between-groups research design is that it will take less time to implement. The randomization of participants to each group is also akin to a small-scale randomized control trial (RCT), which is considered 'gold standard' in research methods.

What are the disadvantages of this research design in Option 3?
The main drawback of this design is that it will require double the number of participants. It is also essential that there is no 'spill over' between the two groups: participants randomly allocated to Group 2 (Control Group) cannot have any (initial) access to the Curiós platform. It is important that these participants are aware of this.

This can raise additional ethical considerations given that Group 2 (Control Group) will not have access to the intervention hypothesized to have an impact. These ethical issues can be justified and need to be explicitly addressed. For example, participants in Group 2 (Control Group) could be given access to the Curiós platform after the study is complete.

How many PCs will we need to recruit?
For the stage of development that Curiós is current at the Early Intervention Foundation (n.d.) recommends a *minimum* of 20 participants in each group.

In this design, the control group (Group 2) is *independent* of the treatment group (Group 1). As such, a total of 40 PCs will be required (i.e., 20 PCs in Group 1, 20 PCs in Group 2).

However, as this is considered a minimum, it would be advantageous to recruit as many PCs that you can and are able to manage.

How many schools will we need to recruit?
Assuming that there is one PC in every school and given that you need to recruit a *minimum* of 40 PCs, you will need to recruit *at least* 40 schools to take part in this study.

How many municipalities will we need to recruit?
Ideally you would also want all of these schools to be within the *same, one* municipality. This will help minimize any fundamental differences between schools due to high-level factors imposed by the local government.

However, if there are not enough schools within one municipality, two municipalities may be required. In this situation, it is important that the number of participants in the two groups are equal across the two municipalities. This will help to address any potential differences between the two municipalities from impacting the results of the study. For example:

Group	Municipality A	Municipality B
Group 1 (Treatment Group)	15 PCs	5 PCs
Group 2 (Control Group)	15 PCs	5 PCs

When should we randomize PCs to Group 1 or Group 2?
You should randomize PCs to Group *after* they have completed the first survey. This will minimize the risk of PCs dropping out from the study and unbalancing your two groups. For example, having 12 PCs in Group 1 and 20 PCs in Group 2.

How can we randomize PCs to Group 1 or Group 2?
Once participants have completed the first survey, you can provide them with their randomized group allocation. This can be done using a blocked randomization procedure, which will ensure that no matter how many participants you recruit to the study, you will always have equal numbers of participants in each group.

A table for these randomized group allocations is included in the Appendix, alongside the randomization code for transparency.

Further actions and issues to consider relevant to all options

What should we do if PCs drop out from the study?
Some attrition (i.e., drop out) is to be expected and it is important that participants always have the right to withdraw themselves and their data from the study. However, you want to minimize this risk as much as possible, so that you can be as confident as possible in your findings.

How can we maintain PCs' active engagement within our study?

As mentioned, maintaining PCs active engagement within the study is essential for the success of your research project. This can be achieved in a number of ways:

1) Ensure all your potential participants are fully aware of what the study will involve and are fully onboard with the process. This can be done through an easy-to-understand information sheet, which addresses questions like: "Who are we and what are we aiming to do in this research project?" "What will the research involve?" "What does participation in this study mean for me?" and "How will my data be collected and how will it be stored?"

    You can also run an information event where you discuss through the study design, its importance, and how their feedback matters to you and the further development of the Curiós platform.

2) Maintain communication with your PCs throughout the course of the study. This is particularly important during the phase where participants are or are not using the Curiós platform. In particular, in Option 3, participants in Group 2 may be more vulnerable to drop out/ not respond if they are totally disengaged from communications with you. Think of ways (e.g. weekly emails) in which you could maintain this communication, while also ensuring that those in the control group are not exposed to the Curiós platform content.

Should we recruit PCs who have not used Curiós before?

Yes. Ideally, if you would like to assess the impact of the Curiós platform on PCs 'change in practice', you will need to work with PCs who have not previously used the platform.

This is because any prior experience with the platform may influence their survey score at Time 1 (i.e., baseline). As such, this will reduce your ability to assess the unique impact of Curiós, when the survey is completed again later in the year, after the PCs have used your platform.

What additional data should we collect about participants' use of the Curiós platform?

The LEAP survey (see Deliverable 2) is one important measure that you want to include in your data collection. This survey has been designed to assess PCs 'change in practice' in response to the Curiós platform.

However, it is also important to consider what is known as 'implementation fidelity', i.e., "the degree to which the intervention is delivered as intended" (see EEF, 2019). For example, could you capture information, either directly from your platform or from the participants themselves, about whether participants used the Curiós platform for a sufficient period of time? How many of the Curiós modules did they complete?

In the context of a pilot study, such as this project, these additional data can also help you interpret your findings and guide directions for future research.

What additional data should we collect about participants not using the Curiós platform?
There is the inclusion of a control group in study design options 2 and 3. In order to make meaningful comparisons between the impact of the Curiós platform and 'business-as-usual', it will be important to capture what 'business-as-usual' actually looks like for these participants. For example, are the PCs using any resources to support their current practice? If so, what are these resources?

This could be achieved through a short survey or interview with the participants. It can be relatively 'light touch' as your goal is to have a short description of what 'business-as-usual' looks like. This will help you interpret findings and later communicate them to your stakeholders.

What additional data should we collect about our participants?
It is also important to capture other demographic information about your participants, including (but not necessarily limited to): number of years' experience as a PC, number of years' experience in education more broadly, gender, location of school (i.e., rural or urban), how many teachers the PCs are used to working with in their school.

This additional data will help to establish the overarching picture of who your participants are and help to understand where your results may or may not be generalizable to other contexts, beyond the scope of the current study, for example, trainee PCs.

What should we do with the data that we collect?
It is important that all data that is collected as part of your study is stored securely and anonymously. You can ensure anonymity by assigning participants with a participant ID. All data stored (e.g., scores on the LEAP survey) should include this participant ID and not the participant's real name, email address etc. This will ensure that each individual participants' data is matched across time (i.e., Time 1 and Time 2 in Option 3).

To help the management of this, it is acceptable to have a separate and securely stored file, which matches the participant's ID with their real name. This file should be securely deleted after the study is completed. This process should be highlighted in your ethics application.

How can we analyze the data that we collect?
For each experimental option (i.e., Options 2 and 3), a recommended statistical analysis plan is included in the Appendix. It is also recommended that you seek the advice of a collaborator(s)

with research experience to ensure that the data is analyzed appropriately to ensure confidence in your results.

Do we need to have a partnership with Brazilian based researchers/institutions?
In the Brazilian context, it is common that ethical approval for research needs to be granted by the regional and national ethics committees. By working with a research institution or collaborator in Brazil, they will be able to help you to ensure that these ethical requirements are in place and facilitate this process.

The researchers/ institutions will also be able to support you with the study implementation process, including the data analysis. In particular, the data analysis will require statistical expertise that may not be present in your current team. It is possible to use your University's Alumni networks to identify a potential partner for this process.

Appendix

Randomization to group

Option 3 (Between-groups design) requires participants to be randomized to one of two groups. The table below details how you should randomize your 40 participants to either use Curiós in Group 1 (Treatment Group) or to be in Group 2 (Control Group).

For example, if Laura completed and returned her survey first, she will be 'recruitorder 1', and be allocated to use Curiós in Group 1 (Treatment Group).

Then Débora completed and returned her survey second, therefore, she will be 'recruitorder 2' and is allocated to be in Group 2 (Control Group).

recruitorder	blockID	group
1	1	Curiós
2	1	Control
3	2	Control
4	2	Curiós
5	3	Curiós
6	3	Control
7	4	Curiós

8	4	Control
9	5	Control
10	5	Curiós
11	6	Curiós
12	6	Control
13	7	Control
14	7	Curiós
15	8	Curiós
16	8	Control
17	9	Control
18	9	Curiós
19	10	Control
20	10	Curiós
21	11	Control
22	11	Curiós
23	12	Curiós
24	12	Control
25	13	Control
26	13	Curiós
27	14	Control
28	14	Curiós
29	15	Control
30	15	Curiós
31	16	Control
32	16	Curiós

33	17	Control
34	17	Curiós
35	18	Control
36	18	Curiós
37	19	Curiós
38	19	Control
39	20	Curiós
40	20	Control

This randomization order was generated using the Ralloc package (Ryan, 2018) in Stata, a software programme. You should not need to use these resources, however, for transparency, the following Stata code was used:

```
ralloc blockID blocksize allocation , ntreat(2) nsubj(40) osize(1)
saving(blockedrandomisation)
drop StratID blocksize SeqInBlk
gen recruitorder = _n
order recruitorder
gen group = ""
replace group = "Curiós"  if allocation == 1
replace group = "Control"  if allocation == 2
export excel using blockedrandomisation_Curiós, firstrow(var)
```

Statistical analysis plan for Option 2 (Within-subject design)

Research question:

Does the use of the Curiós platform support a 'change in practice' in the way that PCs work with teachers in the school environment? To answer this question, the following analyses are suggested:

1. Descriptive statistics- participant demographics

It is important that readers of your research understand, to some extent, who your participants were. As such, you will need to calculate descriptive statistics for the demographic data that you collected, for example:

Participant characteristics	Group 1 (Treatment)
Mean number of years' experience as a PC	
Mean number of years' experience in education	
Gender ratio (Female: Male)	
Mean number of teachers PCs work with	

2. Descriptive statistics- survey results

For each part of the survey (1: Remembering the content, 2: School-teachers-practices observations, 3: Satisfaction, 4: Confidence and self-efficacy) calculate the group Mean and standard deviation at each time point of the project (i.e., Time 1, Time 2, and Time 3). Complete a table, such as this one, for each of the four measures:

Group	Mean (standard deviation) Remembering the content (maximum 45 points)		
	Time 1	Time 2	Time 3
Treatment Group			

3. Inferential statistics

Next, you want to examine whether there is a statistical difference in survey scores between the time when the participants did use the Curiós platform (i.e., scores from Time 1 to Time 2), compared to when they did not use the Curiós platform (i.e., scores from Time 2 to Time 3). This can be done by using a One-Way Analysis of Variance (ANOVA) with repeated measures.

Repeat these analyses for the four parts of the survey.

Statistical analysis plan for Option 3 (Between-subject design)

Research question:

Does the use of the Curiós platform support a 'change in practice' in the way that PCs work with teachers in the school environment, compared to standard practice? To answer this question, the following analyses are suggested:

1. Descriptive statistics-participant demographics

It is important that readers of your research understand, to some extent, who your participants were. It is also important to check whether there are any key differences between the two

groups. As such, you will need to calculate descriptive statistics for the demographic data that you collected, for example:

Participant characteristics	Group 1 (Treatment)	Group 2 (Control)
Mean number of years' experience as a PC		
Mean number of years' experience in education		
Gender ratio (Female: Male)		
Mean number of teachers PCs work with		

2. Descriptive statistics-survey results

For each part of the survey (1: Remembering the content, 2: School-teachers-practices observations, 3: Satisfaction, 4: Confidence and self-efficacy) calculate the different group (i.e., Treatment Group, Control Group) mean and standard deviations at each time point of the project (i.e., Time 1, Time 2). Complete a table, such as this one, for each of the four measures:

Group	Mean (standard deviation) Remembering the content (maximum 45 points)	
	Time 1	Time 2
Group 1 (Treatment)		
Group 2 (Control)		

3. Inferential statistics

Next, you want to examine whether there is a statistical difference in survey scores between the Treatment Group and the Control Group after they have both used the Curiós platform (i.e., scores at Time 2), while also controlling for their scores before they used the intervention (i.e., scores at Time 1). This can be done by using an Analysis of Co-variance (ANCOVA).

Repeat these analyses for the four parts of the survey.

Takeaways and Recommendations

Deliverable 1 provides a roadmap for how to evaluate 'change in practice' for PCs using Curiós, including in comparison to a control group.

Three research designs are outlined to illustrate potential options to the Curiós team. The final choice of research design will depend on what is feasible for the Curiós team when they are ready to implement a new research study.

Overall, we recommend that the Curiós team seek the advice of a collaborator(s) with research experience, particularly to support gaining ethical approval for the study, implementing the chosen research design, and completing the data analysis.

Deliverable 2: Survey Design

Introduction

One big challenge for Curiós is to develop instruments to test PC's knowledge as a result of the intervention. In line with the designs outlined above, we have developed a series of survey instruments, where the first one is aimed at measuring directly, through "hypothetical scenarios" questions, whether the PCs can remember the content of the intervention. This is the type of survey that directly relates to the intervention and its effectiveness in each of the 11 school domains. This former part will be labeled "Deliverable 2a."

The second part of the survey is instead targeted to all PCs and is unrelated to receiving the intervention or not. This is the part of the survey that measures 1) school-teacher-practices observation, 2) PC's overall satisfaction in their job, and 3) PC's confidence and self-efficacy. This latter part will be labeled "Deliverable 2b."

Deliverable 2a: Curiós specific content

This deliverable refers to PC's ability to remember the Curiós content from the intervention by relating each question to concrete "real-life" situations. For each of the 11 school domains that are part of the curriculum, two scenarios are presented. One answer should be picked per scenario, although in some instances there can be more than one correct answer. The answers have attached scores of 0, 1 and 2, where higher is better. The total number of questions is 11x2=22. The higher the score obtained, the better.

1. **Leadership role in schools**

A teacher has voiced their opinion that they're not satisfied with the format of the CPM established in resolution by the secretariat. What do you do?

   A. You explain that there is nothing to be done, since the decision came from the secretariat → 0
   B. You try to understand why the teacher is dissatisfied and decide together with teachers how to make adjustments within established guidelines → 1
   C. You try to understand if this dissatisfaction is widespread and, together with teachers, try to accommodate changes within the guidelines established by the secretariat → 2
   D. You organize a group discussion on the topic with the teachers and temporarily defer any decision → 0

You want to propose a new project to reduce student dropout, but many teachers are resistant to new initiatives. How would you try to make that happen?

A. You ask teachers what they consider to be the main reasons behind student dropout and, based on the responses, propose an action plan in line with your ideas → 1
B. You call a mandatory meeting and enthusiastically show the teachers what the new project may look like in all its facets → 0
C. You actively listen to students and educators to understand the causes of school dropout and propose a collective elaboration of the project → 2
D. You listen to the entire school community about the topic and present your project design → 1

2. Organization and Time Management

A teacher has voiced their opinion that they have too many responsibilities to be handled at the same time. What do you do?

A. You explain that it is their job to manage their time efficiently → 0
B. You try to understand why the teacher is overburdened with multiple responsibilities and suggest strategies to alleviate some of them, such as Kanban → 1
C. You try to understand if this is a generalized feeling among the teacher body and, if so, you gather feedback and provide suggestions in line with the guidelines established by the secretariat on how to best manage competing demands → 2
D. You urge teachers to deal with important issues first and overcome deadlines in a timely manner → 0

You want to devise a new plan to reduce teachers' absenteeism. How would you try to make that happen?

A. You actively listen to teachers to understand the causes of absenteeism and propose an action plan to minimize the issue by strategizing over how to handle absences in a way that minimizes students' learning losses → 2
B. You devise a new system of internal rewards for teachers who miss as few school days as possible and outline this new system to the whole teacher body → 0
C. You meet with teachers and ask them what the main reasons are behind their absences from school, trying to be as understanding as possible → 1
D. You justify teachers if they miss school days yet effectively prioritize their activities and deadlines once in school → 0

3. Purpose and Practice in the School Community

The leader of another school asks you to describe what the Pedagogical Political Project document is. The best way you would summarize it is:

A. A document that each teacher must read and disseminate among students during the very first days of classes → 0
B. A document that enables the school to exercise its maximum potential by outlining school characteristics, objectives, and action plans → 2
C. A bureaucratic document that outlines a set of rules that all school staff must follow for the effective functioning of the school → 1
D. A collaborative document which outlines a series of recommendations that are based on the teaching-learning process → 1

A group of teachers voices the concern that they are unclear about the aims of the PPP

A. You kindly dismiss their concern because this is a document that is drafted and circulated only among school leadership → 0
B. You agree with their concern because the PPP is not a tangible document but a set of unwritten rules and regulations → 0
C. You show the teachers the draft of the PPP and outline its aims in more details facilitating open exchange and discussion → 1
D. You organize a meeting to ensure that everyone understands that the PPP is a collaborative endeavor that can be revised in a collaborative space by all members involved → 2

4. Identity and Communication in School

You are to outline the purpose of a SWOT matrix to other school members. How would you best explain it in simple terms?

A. A strategic tool that aims to help map challenges and opportunities for a specific action plan at the school level → 2
B. An analytical tool that makes the school's PPP clearer and more understandable → 1
C. A diagram that school leaders use to assess teachers' performance and monitor their progress → 0
D. An analytical tool that identifies strengths, weaknesses, opportunities and threats of the neighboring schools within the community → 0

Some school members complain that information is not circulated in an effective way. How would you tackle some of these challenges?

A. You would encourage everyone to exchange all communication through short Whatsapp messages → 0
B. You would encourage staff to use complementary tools, such as Canva for more illustrative information → 2
C. You would encourage all school staff to answer emails as swiftly as possible, possibly by the end of the day → 0
D. You would explain that schools are complex organizations and very often it takes time to channel communication effectively to all school members → 1

5. Feedback for Learning

A teacher asks for clarification about the concept of "learning agility." You explain that:

A. Learning agility refers to the ability to learn from new experiences and develop skills quickly and effectively in a dynamic way → 2
B. The concept relates to the idea that all teachers should adapt to changing realities as quickly as possible irrespective of the context → 0
C. You explain teachers that learning agility could be assessed analytically by using a ruler that considers five different assessment elements → 1
D. You explain teachers that to achieve learning agility they should ask for feedback and seek improvements recurrently without fear of asking → 1

Some teachers would like to get a clearer idea of how school leaders provide feedback in your school. You explain them that:

A. Feedback in schools should be as timely and precise as possible, regardless of the means of communication → 1
B. Feedback may be multi-dimensional and involve aspects such as team dynamics, positive reinforcement, respect, encouragement, collaboration and dialogue → 2
C. All feedback should be provided one-to-one as group feedback is counterproductive in collaborative settings → 0
D. Good feedback should involve short-term as well as long-term considerations → 1

6. Evaluation and Monitoring Data

In evaluating students, you should consider that:

A. Students' evaluation is only the prerogative of teachers and they should take full responsibility for them → 0

B. When evaluating students, it is crucial to consider academic performance alongside students' other abilities and personality traits → 2

C. School coordinators and teachers should work together towards a holistic assessment of students that not only takes into account academic performance → 2

D. Organizing small groups of evaluators may be efficient and beneficial to devise both individual-level and group-level evaluation strategies → 1

A careful evaluation of any school member should be:

A. Conducted primarily by school leaders as they are the ones who have most knowledge about school dynamics and school functioning → 0

B. Designed and explained carefully in all its components in the school's action plans to avoid any misinterpretation → 1

C. Continuous, i.e., done at the beginning, during, and at the end of a learning cycle, to make sure that any upward or downward trend is identified → 2

D. Primarily summative (i.e., done at the end), as this is what is valued by the Brazilian educational system which is mainly focused on achieving good outcomes irrespective of processes → 0

7. Design Thinking

You are about to launch a new project in your school focused on fostering collaborations with neighboring schools. In thinking about project design, you reflect that:

A. Working alone will make reaching your goals quicker and more effective as it will avoid conflicts and complex interactions with other school members → 0

B. Contextualizing the problem and the solution at stake by subdividing them into phases may lead to better deliverables → 2

C. It is essential to engage in collaborative work which requires extensive talking, listening, reflecting, co-creating and experimenting → 2

D. Making mistakes is a natural step and may be instrumental towards reaching even better outcomes at times → 1

You have been introduced to the idea of Active Methodologies and would like to outline it to your teacher body. How best would you describe these?

A. They are methodologies for teaching that have been proven to be effective in other contexts, including outside of schools → 0

B. They are teaching practices that involve students' roles and participation, hence they require participation and joint collaboration among different school members → 1

C. They are teaching methodologies that have a direct impact on lesson planning by involving teachers, students, and families with the idea of transforming the school climate → 2

D. They are methodologies that involve transformations in the school curriculum by means of novel digital technologies → 0

8. Project-Based Learning

A student asks you about how Project Based Learning (PBL) substantiates in practice. You explain her/him that:

A. PBL implies identifying an external company to collaborate with for a short period of time during the school year → 0

B. PBL involves engaging students in tasks and responsibilities that often transcend class boundaries and may intersect with their lives outside of the classroom → 2

C. PBL entails forming a group with other students to develop an idea to be presented in front of the school at the end of the school year → 0

D. PBL involves problem-solving skills and may entail dealing with interdisciplinary topics that are often encountered outside of traditional school curricula → 1

A group of teachers is inquiring with you about potential tools to enable better and more efficient project management among students. You:

A. Tell them that they are mainly responsible for guiding their students' PBL and are therefore free to choose the tool(s) they prefer → 0

B. Tell them that every teacher in every class may adopt different tools to try out the one that is most effective for them and for the students in their class → 0

C. You encourage horizontal teamwork and constant feedback and exchange between students and teachers as much as possible → 1

D. You suggest and describe in details features and benefits of "new" options such as Trello, Kanban, and Canvas → 2

9. Selfcare and Emotional Intelligence

You are a new school leader who is struggling to enact effective leadership practices. In thinking about solutions, you reflect that:

A. You cannot be an effective leader if you don't also devote some self-care to you on a daily basis → 2

B. Emotional intelligence is not necessarily a driving factor for being an effective school leader → 0

C. When faced with complicated or conflicting scenarios, you should prioritize others over yourself as you are working for their best interest(s) → 0

D. Conveying the message that the team is valued should be a recurrent practice in every school as teamwork is as important as individual work → 2

As a new school leader, you are also faced with the challenge of minimizing teachers' burnout and maximizing their motivation and productivity. As such you:

A. Encourage teachers to meet regularly and share tasks and responsibilities when overburdened, so that they can reach a more even balance of workload → 0

B. Evaluate areas in which teachers can be relieved and put an effective mentorship system in place such as meeting recurrently with school leadership → 2

C. Encourage new teachers to get inspiration from veteran teachers, for instance by instituting a mentorship system among teachers at different ranks → 1

D. Exclude teachers from important school decisions that require lots of admin time and responsibilities → 0

10. Pedagogical Intentionality

You are faced with the task of organizing a collective pedagogical meeting. What are some of the strategies you follow to make the meeting productive and useful?

A. Disclose and share the agenda for the meeting the night before the meeting is planned so that everyone could be informed of the logistics → 0

B. Try to be an open, welcoming, and democratic leader who embraces everyone's opinion and participation regardless of rank or position → 2

C. You organize a Daily Reception to greet participants and make them feel at ease and confident → 1

D. You encourage participants to take a break and have lunch on their own to get back refreshed and ready to start with the highest possible energy → 0

What are some key steps you would follow to wrap up a pedagogical meeting effectively?

A. You would go back to the original question and review the meeting objectives one by one so that everyone can keep track of each discussion that has been dealt with → 2

B. You would greet everyone and wish them a good rest of the day, encouraging them to review notes at home → 0

C. In elaborating conclusions, you would ask for participants' opinion on specific topics to make sure their views and opinions are valued and accounted for → 1

D. You would reflect on the theoretical aims of the meeting, encouraging participants to look for additional material in preparation for the following meeting → 0

11. Mediation of Meetings

When organizing meetings with teachers, you are often faced with challenges in mediating conflicts. What are some strategies you may adopt?

A. Dismiss the conflicts and bring back order in the room by re-establishing silence and hierarchy → 0
B. Anticipate when and where some of these conflict mediations may occur and act accordingly, sometimes in anticipation → 1
C. Adopt practices such as a minute-by-minute guide, a Chalk Talk, a stopwatch, making sure to value everyone's contributions → 2
D. Ask teachers to resolve some of their conflicts after the meeting is over, for instance by organizing a teachers' briefing to which PCs and other school staff do not have access → 0

Handling different participants may be challenging at times, yet there are some strategies that have proven helpful to both encourage participation and mediate participants. What are some of the strategies you would follow?

A. Ensure that participants greet and meet over coffee before the meeting starts and get to know each other both professionally and personally → 0
B. Call out explicitly some participants that seem particularly silent but willing to express their opinion through their body language → 0
C. Make sure that no one voice dictates the tone and encourage everyone's participation without impositions → 2
D. Recognize that conflicting arguments and debates are not necessarily a bad thing and may lead to very constructing discussions and outcomes → 1

Deliverable 2b: Content relevant to all PCs

This deliverable refers to a series of survey questions that are independent of the Curiós intervention itself and are aimed at exploring PC's classroom practices, job satisfaction, and self confidence in their job. These are questions that all PCs should answer to get a general overview of PC's lives and wellbeing within schools.

a. School-teachers-practices observations

Adapted from Brazil's Ceara Teacher Feedback Program.

Answer format:
1: Strongly Disagree; 4: Strongly Agree

Regarding your perceptions as Pedagogical Coordinator of this school, please describe your level of agreement or disagreement with the following statements:

- The results of this school have improved over the months I have been a PC _____
- Exams and assessments are well designed to reflect student learning _____
- I have the resources and tools I need to deal with underperforming or low-performing teachers _____
- Teachers at this school are effective _____
- If best teachers could be rewarded with higher salaries, results of my school would be better _____
- If the lowest performing teachers could be easily replaced, results of my school would improve _____
- Having clear annual IDEB goals has improved my contribution to this school's performance _____
- IDEB goals at this school are unrealistic and unfair _____
- Most teachers at this school use creative teaching methods _____
- Students at this school are not guided to improve their performance results _____
- Teachers' tardiness and absenteeism are serious problems in this school _____
- Lack of learning materials is a serious problem in this school _____
- Parents of children in this community are very involved with the school _____

The most serious limitations to improving the results of this school are

- Lack of financial resources _____
- Lack of time to do planning _____
- Lack of time for teachers to work together to develop lesson plans _____
- Lack of time for teachers to work together to exchange experiences _____
- Lack of time to dedicate to pedagogical issues _____
- Lack of teachers _____
- Lack of family support _____
- Lack of community support _____
- Lack of support from Secretariat or Regional Coordinator _____

b. Job Satisfaction

Answer format:
1: Very Dissatisfied; 5: Very Satisfied / 1: Not at all; 5: Very Often

- How satisfied are you with the organization of the school? _____
- How satisfied are you with the school's work environment? _____

- How satisfied are you with the leadership in your school? _____
- How often do you get appreciation for your efforts by school leaders? _____
- How often do you get appreciation for your efforts by teachers? _____
- How satisfied are you with the level of flexibility of work being offered by your school? _____
- To which extent do you feel you can openly and freely communicate your ideas, concerns, and suggestions at your school? _____
- How demanding is your job? _____
- How often do you feel stressed? _____
- How often are your suggestions at work taken seriously by your colleagues? _____
- How often do you feel that the tasks assigned to you make you grow professionally? _____
- How often do you feel encouraged to share new ideas related to lessons with teachers? _____
- How satisfied are you with the level of resources you have at your school to perform your job? _____
- How satisfied are you with the level of transparency and accountability at your school? _____
- How satisfied are you with your employee benefits at your school? _____
- How likely are you to change your current job? _____

c. **Confidence and Self-Efficacy**

Partly adapted from Bandura's instrument.

Answer format:
1: No Confidence: 5: Very Confident

I am confident in my ability to:

- Locate/identify resources for improving teachers' practices _____
- Identify new teaching techniques to integrate into school curricula _____
- Make sure that teachers use a variety of assessment techniques _____
- Determine the academic needs of teachers at my school _____
- Determine the non-academic needs of teachers at my school _____
- Recognize when teachers at my school are dissatisfied with their job _____
- Evaluate teachers' work _____
- Facilitate teachers' discussion and exchange _____
- Facilitate teachers' collaborations _____
- Ensure that teachers help other teachers with their teaching skills _____
- Facilitate teacher/student engagement _____

- Facilitate collaborations between teachers and the administration to make the school run effectively _____
- Establish a feeling of community in my school _____
- Incorporate different pedagogical activities and curricula _____
- Make sure that teachers develop student-centered activities _____
- Make sure that teachers use cooperative learning approaches _____
- Make sure that teachers give students concrete examples when teaching _____
- Make sure that teachers understand the value of cultural diversity _____
- Make sure that teachers convey the value of cultural diversity to students _____
- Make sure that teachers are receptive to new and potentially different instructional strategies _____
- Make sure that teachers can control disruptive behavior in class _____
- Make sure that teachers can get children to follow classroom rules _____
- Assist parents in helping children do well in school _____
- Ensure that school is a safe place _____
- Ensure that students get to trust teachers _____
- Minimize teachers' absenteeism _____
- Boost teachers' motivation _____
- Manage teachers' burnout _____

Takeaways and Recommendations

Deliverable 2 is closely related to Deliverable 1 and the deployment of the tools will depend on the methodological approach chosen. Nonetheless, we believe that both sets of surveys - the one that is tied to the Curiós intervention and the one that more broadly assesses PCs' well-being and job satisfaction - will be of use to the organization in their next steps.

Importantly, these are tools that can be easily adapted (conditional to minor changes to the questions) to teachers, which will be the natural next step following the PCs' surveys and interventions.

Deliverable 3: Fundraising and Partnership Models

Introduction

This section was completed based on the information shared by Curiós in email correspondence, shared information and drawn from earlier discussions. The organization has secured funding at the moment, and is interested in obtaining further funding for expansion. The section that follows considers important principles and questions that should help unpack possible strategies and ways forward as Curiós establishes its value and seeks to grow.

Capital raising

There are numerous funding- and partnership-models that exist, which are used across the teacher training context to finance expansion and growth. These relationships would ideally lead to additional funding for expansion, and would hopefully be linked to a set of impact-orientated returns; and possibly financial-oriented ones too. Given that Curiós is open to partnering with a wide range of actors, from start-ups to non-profits and other organizations who share Curiós' vision for education, there are a variety of funding and partnership pathways that Curiós may pursue for capital raising.

Capital raising is the objective of raising funds that can be used for expansion, including the acquisition of new skills, new research and market development and expenditure on forms of capital assets. This is distinct from generating on-going revenue (or indeed grant funding) that covers operational sustainability, as well as the repayment of any financial return sought.

The diagram in Table 1 depicts a series of decision pathways to showcase these potential funding and partnership structures. The purpose of this diagram is to facilitate thinking around funding flows and the related partnership implications that each model may bring, thereby allowing Curiós to identify those funding structures and partnerships which best align with their needs.

Funding models

There are two main fundraising models: Non-profit and for-profit. Because of the rapidly changing notion of profit and purpose, the distinction between "non-profit" and "for-profit" can

be highly blurred. For this section though the distinction is a hard one, made for the sake of simplicity. In this case, for-profit speaks to a model which allows for the possibility of generating additional revenue in contrast to the non-profit model which is fixed at the level of the grant or in-kind contribution received. Put another way, a non-profit model relies conventionally on grant-funding in order to sustain and grow its activities. A traditional for-profit model raises capital for the same purpose, and sustains the repayment of this through revenue generation. These models are not mutually exclusive and a combination of the two models may be used. For example, a non-profit can indeed generate revenue in order to grow; although this is increasingly common, in the past this increase in revenue would be left to the "for-profit" domain where excess funds would be distributed back to lenders or investors.

Although not depicted in the table below, a third potential model for capital raising is revenue generation. This would require a very high degree of revenue generation such that a "lump-sum" capital amount would not be needed. In this event, or even to supplement a smaller amount of capital raised, Curiós could acquire funding through service provision for those schools and/or municipalities willing and able to pay. In South Africa for instance, teacher professional development has been proven to increase the quality of education that schools are able to offer. Therefore, many private schools make use of teacher training services to enhance their quality of education and become more competitive in the market. Curiós may be able to capitalize on this market trend and ensure a more sustainable revenue stream that can facilitate the expansion of existing projects.

Nature of funding and mechanisms

The nature of funding and related mechanisms exemplify some of the ways in which these funding models may be implemented. It should be noted that it is also possible to have funding that is convertible into other forms, such as debt convertible into equity, debt convertible into a grant, or a grant convertible into debt and so on.

In addition, grant funding can be accessed in both the traditional sense as well as through other avenues such as Corporate Social Investment (CSI). CSI is particularly common in South Africa where the education sector received financial support from 98% of companies and 44% of overall CSI spending in 2022 – the highest supported sector. Teacher development, in particular, received 14% of CSI in the Education sector (Trialogue, 2022, p.105). CSI is therefore another notable grant funding pathway in developing countries such as Brazil that Curiós may be able to tap into.

Nature of partnership

The nature of partnership demonstrates, at a high level, what the partnership may look like depending on the particular funding model and nature. This showcases how Curiós may be able to effectively engage partners in education as well as funding partners for increased resources, exposure, and reach.

In the instance of grant funding, the "return" required by the funder is likely to be exclusively "impact" orientated. Meaning, no financial return would be required. In the for-profit model, a financial return, alongside an impact return, would likely be needed. Where there is a combination of grant and investment/debt funding, both would be needed (i.e., impact investment).

The nature of partnership speaks to mutual value gained by both partners and in some cases, this can lead to a performance-based funding mechanism where achievement of social impact metrics facilitate increased access to funding. For example, the Quality Teaching Academy (QTA) in Australia facilitated 25% more progress for students of teachers engaged in their teacher training programme; and a programme under the Papua New Guinea Partnership Fund led to increased teacher confidence related to teaching reading, basic literacy, and using the Standards Based Curriculum. These significant impacts can be leveraged to increase access to funding through performance-based and other funding mechanisms.

Takeaways and Recommendations

As discussed, this section remains at a high level given the point in Curiós' organizational history: they have been successful in obtaining existing funding and are now considering alternatives. While grant funding might well be the common form of capital provision, impact investing and blended finance (where grants are used to bring down the cost of more expensive funding) is a relatively new concept that seeks to crowd-in conventional funders and investors. The education sector, particularly the teacher training angle, is one that is increasingly being recognised as critical and as such can be used as a way to generate both impact, as well as financial return. One critical component is that as long as revenue is being generated, in other words there is a paying customer, the circle between impact and financial return can be closed; making an investment into Curiós (be it a debt, investment or even commercial partnership) one viable option.

It is argued that not only is a financial return necessary in order to pay back any form of return-generating capital, but the articulation of impact is critical. Our research has identified how other actors portray their successes:

Table 1. Measuring success in teacher training

Case Studies			Relevance of case studies for Curiós	
Evidenced Impact	**Method to achieve impact**	**Reference/Example**	**Alignment with Curiós**	**Examples of how impact metrics link to capital raising opportunities**
25% more progress in mathematics for students	Two teachers per school attend a 2-day workshop on Quality Teaching Rounds (QTR) where they learn knowledge and skills to form a Professional Learning Community (PLC) and implement QTR in their schools. The rounds are then managed by all of the teachers in the PLC and there is a strong focus on reciprocity, turn-taking and confidentiality throughout the process. Teachers are able to access tools and resources to support the implementation of QTR in their schools.	**Quality Teaching Academy (QTA)** https://qtacademy.edu.au/ Gore, J., Andrew Miller, Leanne Fray, Jess Harris, Elena Prieto, (2021) *Improving student achievement through professional development:* *Results from a randomized controlled trial of Quality Teaching Rounds.* Teacher and Teacher Education.	High, but far transfer. PCs don't directly work with students. High level of resources also needed but there could be some opportunities via their partnership with the measurement company	Performance-based funding mechanism where the achievement of a set outcome, for eg 25% more progress in mathematics for students, unlocks a pre-agreed payment
***Increased teacher confidence* in teaching reading, basic literacy and using the Standards Based Curriculum.**	• 10-15 days of in-service teacher training to elementary teachers annually • Training held during school term breaks • Focus on foundational literacy and numeracy teaching, as well as supplementary topics around gender and disability inclusion, child protection, and positive discipline • Engagement with provincial and/or district education authorities as well as NGO staff to deliver and facilitate trainings	**Papua New Guinea Partnership Fund** Asian Development Bank (2021), Teacher Professional Development Case Studies, p.19	High, PC confidence in their role would be beneficial to know. Pawel has drafted questionnaire. Important that questionnaire aligns with Curiós model.	A company that emphasizes credibility and confidence through their work and among their client base could offer Corporate Social Investment to Curiós to create this same confidence in teachers. This showcases value and mission alignment between the company offering CSI and Curiós.

Higher teacher competency in T4E (Together for Education) intervention schools as compared to a control group: ● **30% higher in teacher reading** ● **10% higher in practice of assessments** ● **18% higher in classroom management** ● **17% higher in student engagement**	• Provision of high-quality teaching resources to support delivery of the standards-based curriculum • Post-training strategies developed to further support teachers. T4E is part of the above methodology with a sub-focus on one-to-one school visits. It focused on observing a teacher first and then spending time with that teacher providing feedback and offering advice.	**Papua New Guinea Partnership Fund** Asian Development Bank (2021), Teacher Professional Development Case Studies, p.21	Low, PCs don't necessarily do any classroom teaching. E.g., they are supporting teachers to improve their classroom management, but without actually doing CM themselves.	Curiós may be able to access a low-cost loan to design new programmes and/or research new methodology that facilitates increased competencies among teachers. As a result of achieving these increased competencies, municipalities may pay a higher fee for Curiós programmes. This revenue can then be used to repay the loan and raise further capital.
Improvement in teachers' *content and pedagogical knowledge*	Technology-supported, blended model with two components: (i) guided independent study of self-study multimedia courseware, with classroom application of concepts learned; and (ii) collaborative learning in a school-based Learning Action Cell.	**Philippines—Early Language Literacy and Numeracy Digital** Asian Development Bank (2021), Teacher Professional Development Case Studies, p.22	Same as competencies	Evidence of improvements in teachers' content and pedagogical knowledge would make Curiós a competitive organization for public/private schools seeking to improve their quality of education. This could enable Curiós to access capital through equity at below market expectations given that their product achieves high impact and could become a viable financial asset.
Mindset shifts observed in teachers (increased motivation and *more student-centered teaching approach*)	New teaching and assessment methods introduced by Centres of Excellence in Teaching and Learning (CETL) at Khulna University through a series of 10 workshops, engaging 445 members of teaching staff from across the university's 28 disciplines (faculties) as well as a series of strategic and policy level discussions.	**Bangladesh—Centers of Excellence in Teaching and Learning** Asian Development Bank (2021), Teacher Professional Development Case Studies, p.65	Same as competencies	The ability to influence teacher mindsets and stimulate strategic shifts in the education sector could make Curiós an attractive organization for CSI from companies who are looking to be at the forefront of transformation of the education sector.

| Higher levels of *student engagement, confidence, and motivation* to perform well | Workshops focused on redesigning lesson plans, creating learning situations with a holistic interpretation of the curriculum standard. Uses a new pedagogic approach that centers on real work situations—encouraging independent inquiry, problem-solving skills, and students as co-creators. | **Singapore—Learning To Do, Learning To Be: A New Paradigm in Teaching and Learning**

Asian Development Bank (2021), Teacher Professional Development Case Studies, p.45 | Same as student attainment | Evidence of positive impacts on student engagement, confidence and motivation would showcase Curiós' ability to positively influence educational attainment outcomes. This may allow Curiós to access national and international grants that support this particular impact area. |

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