CEMETS impact evaluation in developing countries

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The Center on the Economics and Management of Education and Training Systems (CEMETS) at ETH Zurich aims to enhance knowledge exchange between leading researchers, policymakers, and practitioners from all around the world through an annual institute.

Every year multiple teams join the CEMETS reform lab and travel to Switzerland for two weeks, where they participate in lectures on vocational education and training (VET), receive scientific input from academic experts, go on site visits to Swiss VET institutions, and learn from experienced practitioners in the field. Moreover, participants work with their teams on their own education system reforms while having access to continuous feedback from leading researchers and other participants. The goal of each summer institute is to identify the problem that each team wants to solve as well as their objectives and resources. Furthermore, teams work on a solution and develop an implementation plan by the end of the institute.

Every country has its own framework that affects reforms and their implementation, making the relationship between the lab and real-world impact very complex. With participants from various countries around the globe, CEMETS is a very diverse institute. This brief summarizes our investigation into whether and to what extent CEMETS has an impact, specifically in the countries involved in the LELAM-TVET4Income (LELAM) project. Annual participation in CEMETS is a key obligation of each of the LELAM project countries, with the aim of building capacity for, providing ongoing support for, and encouraging innovation in education systems reform in the project partner countries. CEMETS should be part of the overall project's pathway to impact, so in this brief we look more closely into the impact of CEMETS in the four countries. Of the four LELAM countries, Nepal has joined CEMETS every year since 2016 (one year prior to the beginning of the project), and Benin, Chile, and Costa Rica have participated since 2017.

Introduction

Caves & Lueling (2021) investigated the CEMETS reform lab's impact on participants and their reform projects for the 2015-2019 cohorts. We therefore already have an idea of the impact of the CEMETS overall, which is shown to be largely positive. The study used data from course evaluations that participants filled out at the end of each reform lab. In addition, all participants from all cohorts of the lab received a survey in 2020 that addressed key indictors related to individual as well as reform case outputs. The survey asked participants to reflect on three time points: before attending CEMETS, immediately after CEMETS, and on the day the survey was filled out (one to five years after attending the lab, depending on cohort). This shows the short-term impact of the lab, and how it persists and evolves over a longer period.

Results

Caves and Lueling (2021) find that the reform labs had a significant effect on the participants and their reform projects in the short term and medium term, shown in Table 1. The strongest impact was on participants' knowledge of VET, where the average comprehension improved by 1.38 points on a 1-to-5-point Likert scale from before to immediately after the institute. As time passed, participants' knowledge not only persisted but increased, resulting in an average medium-term effect of 1.57 points. The study also finds significant improvement in participants' knowledge of education systems and their readiness to lead education system reforms by almost one point on the Likert scale in the short term and even more in the medium term.

The study investigated two additional indicators related to teams' reform projects; the strength of the reform case and whether the case has the right goals. Again, there was a positive and significant effect in both the short and medium terms. Interestingly, the impact decreased slightly over time, resulting in a lower medium-term impact. However, the results suggest that participants believe their cases improved substantially during the lab and that they were still using their implementation plans after CEMETS.

These results focus on the reform lab's impact for all participating teams, which does not specifically address the LELAM-TVET4INCOME participants. As previous studies suggest that demographic characteristics affect the impact of educational programs (Bellei, 2011), it is worth looking into the differences in impact for specific teams. Following that approach, Caves & Lueling (2021) include controls in their regressions and find significant differences for the outcome variable of being knowledgeable of VET. Participants that are native English speakers and come from high-income countries seem to enjoy larger effects than participants without those advantages. For the other key indicators, the controls were not significant.

Table 1: Impact of CEMETS, all participants

Short-term Outputs (Before Lab – Immediately after the Lab)					
Key Indicators:	VET knowledge	Education systems knowledge	Readiness to lead reform	Strength of the reform case	Case having the right goals
Reform Lab Impact	1.38***	0.91***	0.99***	1.07***	0.95***
Medium-term Outcomes (Before Lab – 1 to 5 years after the Lab)					
Key Indicators:	VET knowledge	Education systems knowledge	Readiness to lead reform	Strength of the reform case	Case having the right goals
Reform Lab Impact	1.57***	1.01***	1.22***	0.95***	0.88***

Notes: The table summarizes the regression results for the reform lab's impact on the various key indicators. The first part of the table shows the reform lab's impact in the short term: before and immediately after attending CEMETS. The second part reflects the impact in the medium-term, which looks at how the key indicators changed from before attending CEMETS to the day the survey in 2020 was filled out (1-5 years after attending the lab). The stars indicate the statistical significance: * for p<0.10, ** for p<0.05, and *** for p<0.01.

Although the sample size is too small for a more sophisticated level of analysis, we can still examine the four LELAM countries specifically. For Nepal, Benin, Chile, and Costa Rica, Table 2 summarizes the average answers to the five key indicators at different points in time based on the survey data. The individual outputs are knowledge of VET and of education systems and readiness to lead reforms, and the case-level outputs are reform plan strength and whether it has the right goals. We have averages for three different time points: Before CEMETS, immediately after CEMETS and at the time of the 2020 survey.

Table 2: Impact of CEMETS, LELAM countries only

Key Indicators	Before CEMETS	Immediately after CEMETS (short-term)	At time of the 2020 survey (medium-term)
Individual Output			
Average knowledge of VET programs	3.08	4.24 (Change: **+1.16**)	4.72 (Change: **+0.5**)
Average knowledge of education systems	3.72	4.52 (Change: **+0.8**)	4.8 (Change: **+0.28**)
Average readiness to lead education system reforms	3.24	4.16 (Change: **+0.92**)	4.56 (Change: **+0.4**)
Reform Case Output			
Average strength of the reform case	2.88	3.96 (Change: **+1.08**)	3.96 (Change: **0.0**)
Average for the case having the right goals	3.16	4.2 (Change: **+1.04**)	4.17 (Change: **-0.03**)

Notes: The table shows the averages of the answers to certain key indicators for the participants from Nepal, Chile, Costa Rica and Benin (N=25). The answers were collected at three time points: Before participating in CEMETS, immediately after CEMETS and at time of the survey in 2020, which was 1-5 years after having participated in the lab. Therefore, we see how these averages change over time, namely in the short-term as well as in the medium-term. All differences of averages were significant at the 1% level.

Participants from LELAM countries reported only moderate knowledgeable of VET programs (3.08 average on a 1-to-5-point Likert scale) before coming to Switzerland for the reform lab. Immediately after CEMETS, participants considered themselves more informed (an increase of 1.16 points on average). After the institute, participants' knowledge persisted and even grew, rising to the level of "extremely knowledgeable" about VET (4.72 points) one to five years after participating in the lab.

While participants were somewhat familiar with education systems before coming to CEMETS (3.72 points), they improved their understanding so that they felt extremely knowledgeable immediately after CEMETS (4.52) and again improved upon that knowledge over time (4.8). In a similar manner, they felt more prepared to lead education system reforms immediately after CEMETS (increase from 3.24 points to 4.16), as well as at the time of the 2020 survey (4.56 points).

We also see large improvements for the reform case outputs in the short term. Participants report that the strength of their reform cases increased by 1.08 points during the institute and the goals were more aligned (increased by 1.04 points). While those improvements persist in the medium-term, participants do not report any additional case-level development after CEMETS.

Conclusion

According to the regression analysis in Table 1 and the controls that were included in Caves & Lueling (2021), participants from developing countries should experience a lower impact of the reform lab than participants from higher income countries and native English speakers. However, the LELAM-TVET4INCOME countries are not all developing countries and other developing and non-English-speaking countries have attended the institute. Therefore, the LELAM-specific analysis in Table 2 is a more accurate measure of CEMETS as a pathway to impact for the LELAM project. While both tables report somewhat similar effects in the short term, from Table 2 we can assume that the LELAM countries have experienced larger medium-term impacts than the regression analysis would suggest. This is true for all five indicators.

Clearly, it is difficult to compare those two tables as Table 2 is only looking at averages of 25 individuals. However, the data indicates that LELAM countries have had strong and lasting positive impacts that develop over time as individuals return home and work in the field but do not necessarily continue to grow at the case level. LELAM teams are a selected subset of CEMETS participants, and these differences could be driven by a number of factors. LELAM teams and even some individuals return to CEMETS multiple times, so repeated treatment could drive increased effects. In addition, LELAM countries are more engaged with CEMETS and other researchers outside of the institute, which could enhance the lab's impact. Finally, the participants themselves could be better selected because of prolonged contact between the CEMETS, in-country LELAM team members, and local VET leadership.

The COVID-19 pandemic caused the 2020 and 2021 institutes to switch to a six-month virtual format, and further research will be necessary to determine how that change affected impact overall and specifically for LELAM countries.

References

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