HOW HAS ISOMORPHIC MIMICRY CONTRIBUTED TO THE FAILURE OF FULFILLING THE EDUCATIONAL OBJECTIVES OF THE UNA LAPTOP POR NIÑO PROGRAMME IN PERU?

Policy, Bureaucracy and Development: Theory and Practice of Policy Design, Implementation and Evaluation

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As technology has become increasingly cheaper and more accessible to all, the prevalence of Information and Communication Technologies (ICTs) usage in education has increased. The belief that ICTs "have great potential for knowledge dissemination, effective learning and the development of more efficient education services" (InfoDev, 2017) has actively been pushed by multilateral agencies in global initiatives. As a result, ICTs in national education policies tend to be subject to ambitious development goals despite all the pedagogical concerns and challenges to educators and administrators.

This report aims to understand how the failure of *Una Laptop por Niño* Programme in Peru can be attributed to isomorphic mimicry. The essay begins with introduction to the Programme's original purpose and follows onto the impact it had on educational outcomes. These results are then analysed from the perspective of the four Problem-Driven Iterative Adaptation (PDIA) principles that provide evidence for isomorphic mimicry and capability trap in the context of the case. Finally, the essay provides few crucial recommendations.

THE *UNA LAPTOP POR NIÑO* PROGRAMME IN PERU

In 2005, the Ministry of Education of Peru (MINEDU, in its Spanish acronym) launched the *Plan Nacional de Educación para Todos*, National Plan of Education for All 2005-2015, to provide quality education opportunities for everyone. The plan included two specific objectives: to provide basic conditions of infrastructure, and to provide equipment and educational materials to ensure the conditions for optimal learning, especially in the poorest areas. The success of these objectives would be measured by the percentage of schools that had computers for pedagogical purposes, the ratio of enrolled students in schools that have a computer, and the percentage of schools with access to the internet. This policy clearly responded to the international trend to include ICTs in education as a means to an end, especially the growing popularity of one-to-one computing programmes.

One such popular one-to-one computing programme, backed by the United Nations Development Programme, was the OLPC initiative. OLPC, a non-profit organisation, produces and distributes low-cost laptop computers to developing country governments. The initiative was launched in 2005 at the World Economic Summit in Davos by Nicholas Negroponte (Villanueva-Mansilla, 2015). OLPC's mission is to "eliminate poverty and create world peace by providing education to the poorest and most remote children on the planet by making them more active in their learning" by providing a laptop filled with "content and software for collaborative, joyful, and self-empowered learning" (OLPC, 2017) to each child. In its original charter, OLPC stated that it was not, "a technology programme, nor is the XO a product in any conventional sense of the word [but] a

means to an end" (OLPC News, 2008). The XO laptops were designed to encourage one-on-one computing and self-learning through greater usage of the laptops, not just in class, but at home as well. The XOs are thus a tool to further learning in developing countries and not an educational model.

To achieve the aims of the National Plan, the MINEDU signed an agreement with OLPC to provide XOs to all primary public schools in low income areas, with priority given to rural multi-grade schools with single teachers (Wensjoe et. al., 2014). The *Una Laptop por Niño* Programme launched in 2008, executed centrally by the General Directorate of Educational Technologies (*DIGETE*), with the aim of improving quality of primary education, developing capacities and skills through the use of computers, and training of teachers in pedagogical usage of the computers (Laura & Bolívar, 2009: 36).

IMPACT OF PROGRAMME ON EDUCATIONAL OUTCOMES

Several studies have been conducted since the Programme was adopted by Peru that help provide an insight into what the Programme's impact has been.

Firstly, the results indicate that the programme helped increase accessibility to computers significantly. As Inter-American Development Bank's (IDB) 2012 report on Technology and Child Development evidences: "Eighty-two percent of treatment students reported using a computer at school in the previous week compared with 26 percent in the control group" (Cristia et. al., 2012: 2). In this sense, the programme was able to increase access and provision of technological equipment, which was considered successful as per the government's evaluation criteria, which based on the number of laptops. However, there was no significant improvement in overall educational outcomes.

To this effect, studies show that the provision of laptops did not significantly increase the learning of Maths or Language (Santiago et al., 2010; Cristia et al., 2012), which was the Programme's main goal. Also, the Programme did not affect the quality of instruction in class. Evidence show that most students used the laptops for activities that might have had little effect on educational outcomes, such as "word processing, calculator, games, music and recording sound and video" (Ibid 2012: 3). For instance, most of the laptops were used just to transcribe the texts that were written on the classroom's board (Villarán, 2010).

ISOMORPHIC MIMICRY: AN EXPLANATION OF THE RESULTS

The above-mentioned results show that, in more than one respect, the Programme could be deemed unsuccessful in providing better education outcomes. This, we will discuss, can be characterised as isomorphic mimicry. Isomorphism is described as the adoption of the act to "*look like*" rather than to "*do*". Many states conduct this practice by building processes that take on the appearance of that of a functioning state, without thorough consideration of the underlying functionalities necessary. As the implementation of the Programme put greater emphasis on the *form* over the *function*, the priority was on the distribution of laptops and not on the adequate integration of the Programme into the existing educational system.

Isomorphism creates a fundamental mismatch between the expectations and the actual capacity of systems, leading to unrealistic demands that causes its capabilities to weaken.

Eventually, the state becomes vulnerable to the capability trap, where state capability deteriorates even though the resources are available and development is prioritised (Andrews, et. al, 2012). The implementation of the Programme can specifically be considered a case of "normative" isomorphic mimicry, where organisations in developing countries are encouraged to adopt global agendas and forms of policies that are identified and acknowledged as "best practices" (Andrews et. al. 2017). The inclusion of ICTs in education and the provision of technological infrastructure for schools was widely promoted by international organisations. This became recognised as a solution that aligned with internationally agreed objectives like the MDGs, to which Peru's *Plan Nacional de Educación para Todos* was designed to adhere to (MINEDU, 2005).

Andrews et. al. (2013) propose a series of principles, collectively known as the Problem-Driven Iterative Adaptation (PDIA), that can help escape the capability traps. PDIA should not be considered as a framework as such, but it combines the following principles to avoid isomorphic mimicry by: (i) solving problems according to local contexts by (ii) encouraging experimentation for 'positive deviance', which increases (iii) practicing experimental learning and iterative feedback by (iv) engaging a wide range of relevant agents (Ibid, 2013: 237). The review of these elements in the Peruvian context can help analyse the case by defining how isomorphic mimicry may have contributed to the poor outcomes of the Programme's adoption.

Local Context

The authors place importance in the consideration for local context and prioritising local actors' interests. For the implementation of the Programme in Peru, Laura & Bolívar (2009) identified a series of barriers for the effective curricular integration of technology that can be related to the specific Peruvian context. Among these they mention: the condition of teachers as non-familiar to technology, and the dual role of some teachers who are forced to do the job of head-teachers as well as classroom teachers. The former led to a lack of proficiency in basic technological abilities, and the latter condition put the teaching staff in a multitasking situation, where they could not provide the necessary attention to the new technology. Furthermore, the absence of adequate internet access in rural areas, added layers of difficulties for the implementation of the initiative. As the IDB's impact evaluation shows, only 1.4% of the schools had access to internet, which inevitably limited the success of the Programme (Crista, et. al., 2012). Additionally, the consideration of Peru's heterogeneous society should have been accounted for, where native languages like Quechua and Aymara are an important part of rural societies, who were the initial priority of the national plan.

The Programme design and budget focused mostly on the attainment of the laptops rather than its adaptation to local conditions. There were insufficient remaining financial resources, after the purchase of the laptops, to integrate the software, adequate security measures, training, and pedagogical strategies into the educational system. This gave greater importance to the *form* of the Programme than its *function,* as the educational system did not integrate the laptops appropriately (Villanueva cited in Laura & Bolívar 2009: 33).

Engaging Actors

Engagement of a broad set of relevant actors cannot be disregarded in any programme or policy. In the Peruvian case, the fact that the implementation of the Programme was the central government's responsibility, limited the influence of the regional and local governments in programme formulation and implementation. Furthermore, teachers were not considered as relevant actors in

the implementation and were not trained properly to integrate technology into pedagogical practices. The trainings were considered insufficient and had low-impact in terms of the capacity to engage methodological strategies that included the laptops (Laura & Bolívar, 2009). In fact, only 10.5% of teaching staff reported having received technical support and 7% received pedagogical support for the implementation of the programme in school (Cristia et al., 2012). Parents were also neglected within the implementation process. They were not aware of the benefits that laptop home-use could have, such as self-empowered learning. Instead they had safety concerns that inhibited the transportation of the laptops, resulting in only 40% of laptops used at home (Beuermann et al., 2015: 55).

Experimental Learning and Iterative Feedback

It is important to perform real-time experimental iterations to facilitate "learning about the context and the effectiveness of potential solutions to the focal problem" (Andrews et al. 2017). The Peruvian case suffered from impulsive decision making based not on evidence and evaluation, but on international trends of incorporating ICTs in education. The decision by the MINEDU to purchase 40,000 laptops for all primary public schools in low income areas was made following a short-lived pilot project that distributed of 46 laptops in a small rural village a few months earlier. This pilot was not sufficiently evaluated and thus did not leave time to learn about the context through active learning. This type of linear implementation process omits the ability for "flexibility", where ongoing evidence and constant feedback on problems, issues and lessons learnt can occur in real time (Ibid, 2017). In this regard, the MINEDU did not conduct periodic assessments of the impact of the programme on education. The first Ministry-supported evaluation only occurred five years after the launch and even though it showed that the programme had no impact, results were not taken into consideration to modify the implementation. The execution of the programme was highly centralised and did not receive feedback from the regional or local governments, which could have been a source of valuable experiential information regarding the implementation at local level.

Positive Deviance

Similarly, "positive deviance" could have encouraged better contextual implementation and design of the Programme. Positive deviance relates to ideas that are already being acted upon in the change context, yields positive results and is proven to be effective in addressing the problem in the context but are not a part of the existing norms (Ibid, 2017; Marsh et al. 2004**)**. In this case, firstly, there was no clear pedagogical model linking the laptops' software with particular curriculum objectives (Cristia et al., 2012), reflecting absence of any direct positive deviances. Teachers did not know how to use the laptops to meet specific curricular goals and students could not reinforce the contents learned in class with the new technologies. Also, the modification of pedagogical practices was not foreseen. Secondly, the Programme ignored any positive deviances arising from the most relevant community: the private schools. One of the initial agendas of the programme was focused on reducing the digital divide between public and private schools, suggesting that private schools were better at integrating ICT in education. Despite the existence of relevant deviances, the Programme did not examine the successful practices followed by private schools and diffused knowledge into the Programme. Thus, the knowledge from positive deviances could not contribute to transforming the educational processes, but rather resulted in new technology assimilating to the previous existing practices (Wensjoe et al., 2014).

It is possible to assess from these principles, the Peruvian government failed to address the *functional* aspect of the Programme. Although the objectives seemed pertinent in the inclusion of technology for education, the integration process had no clear proposals for the actual classroom activities, teacher training, and curricular development from the pedagogical model sustained by OLPC that could help achieve these (Laura & Bolívar, 2009: 27-28). The Peruvian government can be said to have become vulnerable to the capability trap because the misinformed evaluation of the Programme's success encouraged its continuous implementation. By considering the number of laptops distributed, rather than the lack of actual educational outcomes as the measure of progress, it resulted in a mismatch of expectations and actual capability. There had been insufficient functional evaluation because MINEDU had based its decision entirely on *form* and their fulfilment of following the trend of education in technology (Pritchett & de Weijer, 2010).

RECOMMENDATIONS

GRADUAL REFORM: TRAININGS AND INCENTIVES

Technology alone is not the panacea for a poor education system. Technology alone will not improve educational outcomes, it has to be accompanied by its gradual integration to the educational system and appropriate training. Our recommendation to combat the existing weaknesses in poor integration of the technology to the national curriculum must be approached in two ways. First, there needs to be an alignment of the educational curriculum taught by schools with the technology's capabilities. Second, providing incentives and adequate training of teachers to maximise their utilisation of the technology present. The purpose of these methods is to change the norms of teaching by creating an environment that adapts well to new ICTs and places focus on the student learning experience.

The laptop's capabilities can be integrated with the existing educational curriculum by: ensuring that the relevant learning material is available, purpose is established for every interaction with the device, and new methods of usage is continuously identified. For the best utilisation in accordance with existing technological resources, teachers must possess the appropriate knowledge and tools. The teacher curriculum should also include the integration of technology into teaching and the usage of it to prepare learning resources. Assurance that teachers apply this theory into practice can be achieved through incentivising them with career progression opportunities based on performance-linked evaluation mechanisms.

EVALUATION AND ACCOUNTABILITY

Evaluating the effectiveness and viability of technology-based education programmes within the given structure of the institution is essential to integrate ICT and education in Peru. Despite delivering over 850,000 laptops across various regions, there is no "silver bullet" to ascertain the extent of an effect of the Programme on student learning (Phillips & Gilding, 2017). Since ICT programmes cannot be seen in isolation, MINEDU should look at student learning in the teaching and learning environment as a whole. Continuous feedback mechanisms for evaluating projects that involve various stakeholders at the local and central level should be implemented. These feedbacks, when clubbed with gradual reforms and trainings, would provide strong linkages between the performance of ICT-based programmes, how they can affect the processes of learning, and what learning outcomes have been or can be achieved. Continuous evaluation will allow the government to make evidence-based policies by gathering information related to usage of laptops in teaching

methods through students and parents surveys; improvements in cognitive and academic skills of students through randomly assessed tests; development of ICT programmes, teachers' knowledge of ICT or the pedagogical knowledge related to the integration of ICT into classroom practice, to improve education among students in Peru. Given the complex socio-economic background of Peru, it is essential to combine a range of qualitative and quantitative techniques to answer specific evaluation questions like interviews and surveys.

A well-designed evaluation that Peru needs would also foster accountability in every stage of the execution of ICT-based learning systems across the education sector. While evaluations reflect the process of service delivery to an extent, monitoring of the pedagogical practices is very critical for recuperating the existing practices. Involvement of local officials of MINEDU part of the Local Education Management Units (UGEL) can monitor the teaching practices in classrooms at local schools. Furthermore, teachers can use regular self-assessment activities and focus group discussions for interactive monitoring (Wagner, et. al., 2005). Involvement of various actors within society in the delivery, monitoring, and evaluation processes would also mean better monitoring and evaluation, hence, improved efficiency and accountability of the programme.

SUSTAINABILITY

After investing millions, the main goal of the Peruvian government is to facilitate teachers and students to benefit from the ICT inputs –both devices and trainings- even after the OLPC-like projects' funds and technical assistance have concluded. Sustainability of ICT in education programmes relies on the ability of an educational ecosystem to maintain scholastic processes, functions, diversity and productivity into the future (Wayan Vota, 2009). ICT in education programmes often receive attention for being unsustainable, due to costs or poor long-term planning from the outset (Pouezevara et al., 2014). One of the main hurdles of the Programme in Peru was lack of technical support for device malfunctions, especially in rural areas. To overcome the technical glitches, the government should provide hardware and software training to at least one IT official from MINEDU at every UGEL office, who would gradually, over time, disseminate knowledge into schools' administration and local youths.

Politically, ICT based projects can be sustained through awareness campaigns run by the local government to educate people and civil society about the need of ICTs in this era. Awareness about ICTs in local communities and involvement of teachers will ensure sustained demand for efficient implementation and regular improvements of the programmes across all the governments. Furthermore, at the institutional level, involvement of school administration, teachers and parents in decision making would promote political sustainability (Jhurree, 2005); however, this initiative should be very gradual as most of stakeholders might not have adequate knowledge about technology management and usage policies.

CONCLUSION

The essay argues that the implementation of the Programme focused more on the *form* than its *function*, thus qualifying it as isomorphic mimicry. By evaluating the distributed number of laptops instead of integration of the technology to the education system, the Peruvian Government subsequently entered a capability trap for over a decade. The government continued with the Programme in an attempt to improve overall education by promoting parallel existence of the internationally accepted norm that claims ICTs result in improved education and the tradition

Peruvian educational system. This is confirmed by their proven neglect of the four PDIA principles. The possible recommendations to improve upon the current situation includes providing training and incentives to teachers, developing stronger evaluation mechanisms and ensuring future sustainability of the ICTs in education.

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