

Theoretical and practical considerations in the creation of a disaster risk reduction educational strategy for basic education level: Mexico City study case

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In a world where catastrophic events are more frequent and more intense, it becomes relevant to involve children and youth in disaster risk reduction (DRR), looking to enhance their ability to cope with and recover from disaster situations. This can be done through basic education since part of the role of schools is to provide the tools that allow students to develop their abilities, therefore, educational settings propose an opportunity and a challenge in the creation of a disaster risk reduction culture in communities for: decision makers, teachers, and children.

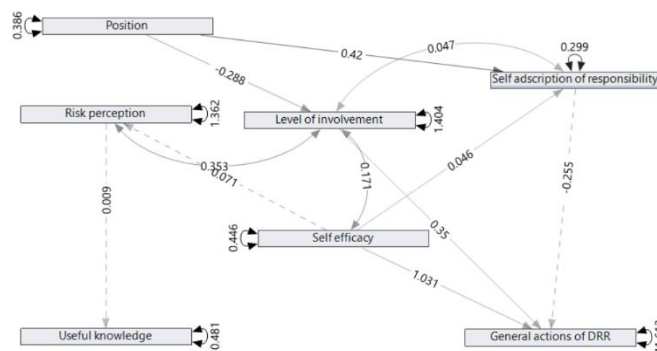
The selection of the general framework as well as the construction of adequate educational materials and the decision of the dissemination mechanisms to use, are as important as the contents and targets to prioritize. Equally important is to identify the approach toward "learning" that it prioritizes, especially when it is assumed that there is not a unifying theory of education that fits all criteria. The approach could have a more empirical style while others could adopt a more rationalistic trend, therefore influencing the materials that the strategy should use. It could be the case that knowledge delivery out-weights the practical activities or the strategy centers around experiential learning.

This study reviews the disaster risk reduction educational strategy (DRRES) implemented in Mexico City schools since 2019 up to 2022, and analyzes the results of its conformation elements through several mechanisms: 1) Opinion of principals and teachers (1,788) from 714 schools, 2) Interviews with high level authorities and field personnel from several agencies involved in the strategy (12), 3) Official databases and actual compliance with regulations and, 4) Memorability and efficiency measures of educational activities and materials.

Through the opinions of the interviews with authorities and field personnel, it can be seen that the main intention is to promote the development of "capacities" in the school population through "preparedness" mainly focusing in action response and trying to be child centered. With this objective, the construction of action centered materials easy to grasp, focused on problem solving focusing on accumulating experience by repetition (use of drills and field activities) was preferred. Nevertheless, even if the opinions expressed on the interviews and the rationale behind the strategy is aligned with a constructivist approach, the way to articulate the activities and materials are mainly designed for providing knowledge in a top down manner. Knowledge transmission have a high value around the whole strategy and it is seen as a necessary step for creating the superstructure that will mediate experience. Even with this, it is important to mention that the most valued activities retrieved on the interviews as well as on the survey are related with field experiences, therefore experience based. It is important not to oversimplify the distinction, in many of the cases, a mixture of experience and knowledge transmission is generated.

Complementary, the results extracted from the survey revealed a complex network of elements associated with the appropriation of the DRRES, being the most important and easy to target the "belief of self-efficacy when facing

emergency situation" as a precursor for affecting involvement, self-responsibility ascription, risk perception and even preference in the type of knowledge to deliver to children. "Self- efficacy" and "Involvement" dimensions looked to be key points where institutional efforts should be particularly directed. A high belief (confidence) in oneself response, increases the amount of DRR actions performed, as well as increases involvement and its ascription of self responsibility towards your immediate community, in this case, children's and colleagues being then a significant element in communitarian DRR approaches. We believe that higher self-efficacy beliefs are consistent with bottom up strategies (rather than with top down approaches), which share the idea that through enhancing participatory action, involvement increases and consequently a sense of community that acknowledge self and mutual responsibility is created.



About the activities and materials implemented, different degrees of success were found, being the highest those related to psychosocial support (attending actual needs due to pandemic effects) and disaster response plans (attending mandatory regulations), while the modality of interaction revealed that "Machine interactivity" activities showed higher efficiency rates than "Human interactivity" or "No Interactivity". It is important to notice that the return to face to face classes signified a heavy burden on principals and teachers, who needed to deal with the aftermath of the long absence period of children within their classrooms, both in the academic sense and also in the emotional processes of the students as was mentioned on the interviews. The teachers' demands could be seen by the high interest and usage of these materials as reported on the survey, where the Socioemotional course obtained the second higher recognition rate (51%), and also had the most participants reported previously (74,126) plus an estimated of over 174,000 people benefited from it in the sample, mainly in elementary school level (54%) but with a wide usage also on middle school level (40%). These results are consistent with the high percentage of reported "existence of psicosocial support at schools" (71%). Despite of that, it is interesting that another material developed mainly with this objective, the "Ollin teachings comic book", that was disseminated by several methods (conference, mailing and printed distribution), got a relatively small recognition rate (27%) and a smaller efficiency rate (total benefited / total actions) compared to the Socioemotional course, suggesting that for teachers and principals, it was more important to develop their own socioemotional capabilities through training (these type of actions are consistent with the coping style reported mainly as "active" (83%)), than using the Ollin comic book to work this aspects with their student population.

Analyzing a complex DRRES like the case of Mexico City from its start, facilitates the understanding of the complexity of the educational system from the point of view of decision makers and field personnel, as well as many of its implementation challenges.