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How effective is Disaster Risk Reduction education? A longitudinal study of secondary school students in Dominica.

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Priority 3 of the Hyogo Framework for Action (HFA) (2005-2015) explicitly outlined the role of education to improve Disaster Risk Reduction (DRR). By 2013 the deadline to integrate DRR into school curricula had disappeared and when the Sendai Framework for Action (SFA) (2015-2030) was published it merely sought to 'reduce losses from disaster risk'. This reduction in educational emphasis may be a consequence of difficulty to establish DRR effectively into school curricula. Despite this, UNESCO outlined a guide for effective approaches to DRR education (Kagawa and Selby, 2012). This study presents results from a longitudinal study of secondary school students in Dominica, Caribbean, assessing the impact of three UNESCO educational approaches; interactive, surrogate and field-based learning. These educational sessions occurred between 2016-2018 during a time where the population were subject to natural hazards, most notably Hurricane Maria in 2017.

This study uses the Pictorial Representation of Individual Self Measure (PRISM) to assess change in student perception of multiple hazards before and after educational sessions, as a measure of effectiveness. The educational sessions were designed based on recommendations from past studies and through collaboration with local DRR professionals (aid agencies, government and local experts) and schoolteachers, to increase relevance to the local community. Relevant pedagogic theories were integrated to encourage student engagement.

All educational approaches were shown to have impact, though the greatest change in perception was caused by field-based learning. These sessions caused a greater change in student perception towards lower frequency, higher magnitude geophysical hazards. Some educational approaches, while considered 'engaging' did not have a clear DRR message which should act as a warning to the DRR community. This study highlighted the need for educational approaches to incorporate variety, participation, and adopt local relevance. We highlight the need for improved integration between geoscience and educational professionals to improve DRR education. Further work also needs to be undertaken to understand the relationship between effective educational approaches for DRR and resourcing.