



Development of big books using mother tongue-based multilingual education (MTB-MLE) for climate change and disaster response

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ABSTRACT

This short communication reports the development and classroom use of Big Books designed through the Mother Tongue-Based Multilingual Education (MTB-MLE) approach to introduce climate change and disaster response concepts to early grade learners in the Philippines. In line with national MTB-MLE policy, Big Books were developed in the Ilocano language and used during guided reading sessions. Classroom observations showed that mother tongue-based instruction enhanced learners' comprehension, participation, and ability to articulate ideas related to disaster preparedness. Teachers also reported improved instructional clarity and learner engagement. These findings suggest that culturally and linguistically responsive Big Books can serve as effective instructional tools for early disaster and climate change education.

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INTRODUCTION

The Philippines is among the most disaster-prone countries in the world, experiencing frequent typhoons, floods, earthquakes, volcanic eruptions, and storm surges (UNDRR, 2019). Early education on climate change and disaster preparedness is therefore essential for building long-term resilience. In response to learning challenges in early grades, the Department of Education implemented the Mother Tongue-Based Multilingual Education (MTB-MLE) policy in 2012, mandating the use of learners' first languages as media of instruction in Grades 1 to 3 (Department of Education, 2012).

Previous studies indicate that instruction delivered in the mother tongue improves comprehension, cognitive development, and classroom participation among young learners (Benson, 2004; Ball, 2011). Lindholm-Leary (2014) further emphasized that early literacy instruction in a familiar language strengthens academic confidence and learning outcomes. Within this context, Big Books—large-format storybooks with visual and interactive elements—have been shown to support early literacy development and learner engagement (Neuman & Roskos, 2007). Integrating culturally relevant narratives into Big Books further enhances motivation and meaningful learning (McGee and Richgels, 2012). This study explores the use of MTB-MLE-based Big Books as a medium for climate change and disaster response education in early grades.

MATERIALS AND METHODS

An action research design was employed to develop and implement Big Books in early grade classrooms. The Big Books were written in the Ilocano language and featured a child character named Dino, who encounters common natural hazards in the Philippine context and demonstrates appropriate preparedness and response strategies. The materials were used during guided reading sessions facilitated by classroom teachers. Observations focused on learner engagement, comprehension, participation, and teacher facilitation during the reading activities.

RESULTS AND DISCUSSION

Classroom observations indicated that the use of Ilocano Big Books enhanced learners' understanding of disaster-related concepts. Children actively participated in discussions, responded confidently to teacher prompts, and demonstrated familiarity with basic safety and preparedness practices. The use of the mother tongue enabled teachers to explain complex concepts—such as disaster risks and climate-related events—more clearly and effectively, consistent with previous findings on MTB-MLE effectiveness (Benson, 2004; Ball, 2011).

Learners showed high levels of enthusiasm during reading sessions, particularly when interacting with illustrations and story elements, supporting earlier research on the instructional value of Big Books in early literacy and engagement (Neuman and Roskos, 2007; Zevenbergen and Whitehurst, 2003). The culturally familiar narratives helped learners relate disaster scenarios to their lived experiences, reinforcing the role of culturally relevant pedagogy in promoting meaningful learning and community resilience (Ladson-Billings, 1995; Aldrich and Meyer, 2015).

CONCLUSION

The development and classroom implementation of Ilocano Big Books within the MTB-MLE framework proved to be an effective approach for introducing climate change and disaster response concepts to early grade learners. Mother tongue-based storytelling enhanced comprehension, engagement, and learner confidence while supporting culturally responsive teaching. This approach demonstrates strong potential for strengthening disaster preparedness education in linguistically diverse and disaster-prone contexts.

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REFERENCES

- Aldrich DP, Meyer MA.** 2015. Social capital and community resilience. *American Behavioral Scientist* **59**(2), 254–269.
<https://doi.org/10.1177/0002764214550299>
- Ball J.** 2011. Enhancing learning of children from diverse language backgrounds: mother tongue-based bilingual or multilingual education in the early years. UNICEF.
- Benson C.** 2004. The importance of mother tongue-based schooling for educational quality. UNESCO.
- Department of Education.** 2012. DO 16, s. 2012 – guidelines on the implementation of the mother tongue-based multilingual education (MTB-MLE). Republic of the Philippines.
- Ladson-Billings G.** 1995. Toward a theory of culturally relevant pedagogy. *American Educational Research Journal* **32**(3), 465–491.
<https://doi.org/10.3102/00028312032003465>
- Lindholm-Leary K.** 2014. Student outcomes in bilingual, dual immersion, and English immersion programs. Center for Applied Linguistics.
- McGee LM, Richgels DJ.** 2012. Literacy's beginnings: Supporting young readers and writers, 6th ed. Pearson.
- Neuman SB, Roskos K.** 2007. Nurturing knowledge: building a foundation for school success. Scholastic.
- United Nations Office for Disaster Risk Reduction (UNDRR).** 2019. Global assessment report on disaster risk reduction.
- Zevenbergen AA, Whitehurst GJ.** 2003. Dialogic reading. *Reading Research Quarterly* **38**(1), 112–134.
<https://doi.org/10.1598/RRQ.38.1.6>