

A REGION-SPECIFIC PERSPECTIVE ON EQUITABLE STEM EDUCATION

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THEME:

STEM education in diverse contexts

BACKGROUND AND AIMS

The STEM acronym has been inducted into the Canadian educational lexicon as a result of its widespread use by our geographic neighbors in the United States. Much of the discourse associated with STEM has centered on the value of STEM education as a mechanism for promoting economic development and personal and national competitiveness. Despite the strength of voices describing STEM education as an economic imperative, there are also many who view STEM as a potential leveler, a means by which equity can be promoted in a rather dated education system.

This study examines the discourse of a new provincial curriculum (released in 2022) alongside the discourses promoted by public school boards and equity-focused STEM education organizations in the region. The aim is to present ways in which the interests of the range of formal and informal STEM education providers can be reconciled so that STEM education can, indeed, be used as a mechanism of inclusion in a way that is responsive to this localized context.

METHODOLOGY AND METHODS

Critical discourse analysis was employed to examine three discourse fields within a defined region in East-Central Canada:

- New provincial curriculum documents
- Website-based school board policy and promotional materials
- Survey responses from 20 leaders of organizations providing STEM education for minoritized learners

The text from each field was coded in two dimensions: i) the definition of STEM education, and ii) the intent/purpose of STEM education. Our analysis used an adapted version of a framework described by Carmichael (2017) in a pan-USA STEM education study.

RESULTS AND CONCLUSIONS

Interdisciplinarity (not necessarily including all four of the STEM subject areas), real-world connection, and hands-on learning were the most cross-cutting themes for all fields examined. Nevertheless, we found a concerning mismatch between the focus of school boards/curriculum documents on economic prosperity (where coding was seen as an essential skill) and the emphasis on environmental, student-led learning made by the leaders of STEM education organizations for minoritized learners. The lack of emphasis on student- and community-responsiveness presented by the school boards/curriculum documents will have important implications for teacher pedagogy and we take this opportunity to present these findings and potential pedagogical adaptations to educators who wish to improve their inclusion practices.

REFERENCES

Carmichael, C. C. (2017). *A state-by-state policy analysis of STEM education for K-12 public schools*. Seton Hall University.

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