

Book Review/Recension d'ouvrage

Joyful Math: Invitations to play and explore in the early childhood classroom

by Deanna Pecaski McLennan

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Joyful Math is a collection of theory-based numeracy methods from Canada's Prime Minister's award-winning teacher researcher of 2020, Deanna Pecaski McLennan. Pecaski McLennan is a teacher practitioner whose focus has been on outdoor mathematics methods at the Kindergarten and primary levels, and as such, *Joyful Math* (2020) explores five methodological areas of pupil-led learning.

Pecaski McLennan examines the Reggio Emilia approach to pupil-led lessons in Chapters 1 and 2 to describe the criteria and conditions necessary to have primary students set the learning objectives for a lesson in a 'play-based' environment. Building on the work of Julianne Wurm (p.8), Pecaski McLennan's asserts that the 'black canvas' space the class begins with in September must be built *together* with the students for successful engagement in the space later in the school year (pp.10-12). Pecaski McLennan, like Reggio Emilia, also calls these environmental learning choices 'The third teacher'. The author's investigation into successful engagement with the collaborative environment includes the following three main findings: Children are effective communicators; Adults and children are co-learners with their environment, and; Documenting children's thinking processes and learning honours their ideas. The latter, in itself, is a new concept in primary math methods in Canada; that is, the focus on the assessment of numeracy learning development as a way to honour new voices. This

approach to 'honouring voices' also allows for equity and social justice to take hold early in the educational system.

Explorations of building foundational mathematics through spatial play, fractions, and integrating literacy with the building of environmental mathematics are richly described and disseminated through Chapters 3 and 4. These two chapters draw upon the earlier (2016) work of Trent University education researcher Cathy Bruce's team. Colour photographs and narrative descriptions from the pupil participants evidence the diverse ways that integrations in visual art, story, drama and food security can develop mathematical concepts in children. Again, the materials used within the visual art integrations are all collaboratively collected from the pupils' outdoor environment, providing a key connection between the visual natural world, mathematics and the classroom.

The final chapters of *Joyful Math* provide a survey of early mathematical methodologies in the outdoor environment and how to document and assess numeracy learning there. The primary query posed in the last third of the book is, 'What is the math?' (p.106). That is, what do we consider 'math'? How may it be identified for lay teachers and parents in our natural environments? And what types of things may be used to develop foundational numeracy, spatial knowledge, fractions and linear functions? These questions are key in preservice teacher education programmes, and the reference list provides a rich resource for our teacher educators working within Primary levels. We do not often consider teacher practitioner work within our canon, and yet this link between theory and practice is key to our work as educators and leaders.

References

- Bruce, C., Flynn, T., & Bennett, S. (2016). A focus on exploratory tasks in lesson study: The Canadian 'Math for Young Children' project, *ZDM Mathematics Education*, 48(4), 541-554. doi: 10.1007/s11858-015-0747-7