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Mapping Across the Curriculum: Cartographic Theory for K-8 Education

Chelsea Nestel [a,*]

[a] *University of Wisconsin−Madison (USA), nestel@wisc.edu*

* Corresponding author

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Abstract:

Cartography is not simply about maps, but potentially intersects any area of study. However, in primary schools, cartography's role in the curriculum is narrow, focused on identifying the elements and functional purposes of maps (Reyes Nunez 2020). That narrow focus excludes the underlying epistemology of cartography and cartographic ways of thinking. To educators, cartographic topics may seem abstruse–especially in terms of what should be included in primary grades' curricula. I argue that these topics are not, abstruse, and that they are highly appropriate to introduce in primary education because cartography's interdisciplinary nature can provide a foundation for integrating multiple discipline literacies and teaching multiple ways of knowing about the world. More practically, cartography can serve as a means for developing multi-disciplinary learning opportunities that teachers can use to address multiple educational standards in a single unit of instruction (lesson, series of lessons, projects, etc.) while lengthening the reach of cartography as a discipline.

Recognizing the potential for cartography to enhance primary curricula, the University of Wisconsin-Madison Cartography Lab (UWCL), in collaboration with researchers and education experts at the University of Wisconsin Center for Teaching, Learning and Mentoring (CTLM) developed a set of cartography education standards for students in kindergarten-8th grade. To our knowledge, no such cartography-specific standards currently exist in the US, providing a critical outreach opportunity for Cartography and Geography to enrich the education of schoolchildren and bring awareness of the importance of cartography and geography in our curriculum and our world.

In this presentation, I describe the process of creating cartography education standards, following the principles of outcome-based curricular design and child development. Our approach is informed by the needs of teachers and students in Wisconsin. It is open access, so educators outside of Wisconsin and the US can adapt it to their needs and intends to be accessible to teachers with no prior training in cartography. The curriculum features "teacher-informed design": explaining what teachers need to incorporate cartography and geography into the curriculum. Teachers are busy and looking for new ideas they can incorporate into their current curriculum. How do you make your lessons and curriculum accessible and helpful to this audience? Furthermore, how do you ensure educators know about your curriculum? Second, I discuss how our education standards were leveraged to construct example lesson plans using a backwards design process. I conclude with the anticipated next steps for the project and opportunities for expanding this work.

Understanding how spatial knowledge "works" is more important than ever, especially for children coming of age in today's dynamic world. I hope this work, alongside other efforts in Geography, such as from NACIS and UCGIS, will assist in developing cartography standards beyond Wisconsin and enhance the profile of Cartography and Geography in primary education.

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