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Assessment and evaluation in geographical and environmental education

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Finding out what has worked and what has not worked is essential for the advancement of human performance. Without assessment and evaluation, we cannot choose which performance intervention to discontinue, alter, maintain, or enhance (Kaufman, Keller and Watkins, 1996). We have a constant need to measure, analyse, and make decisions, yet we need to ask if we are assessing or evaluating. Both assessment and evaluation are important aspects of education—they are central to learning and teaching. However, the terms assessment and evaluation are often used interchangeably. This is erroneous. Assessment is concerned with measuring effectiveness. It is the process of making judgements and or measurements of the worth of a person or a process. Evaluation, on the other hand, involves gathering information related to learning activities or subjects. Evaluation involves adding a value aspect to the process. The value relates to the importance we assign to the information in determining success or failure.

In geographical and environmental education, we often see research relating to the assessment of student learning as well as programme evaluation in the domains of formal and informal learning. An IRGEE editorial (Reid, 2018) called for further investment in research and evaluation to improve practice in environmental education. Before this, IRGEE published several studies on the evaluation of geographical or environmental education programmes. Later, IRGEE published a systematic review (Lane & Bourke, 2019) of assessment in geography education. The study concluded that greater clarity is needed regarding:

1. the essential geographical knowledge and skills that students should learn and develop;
2. the characteristics of the learning progressions in the respective knowledge and skills; and
3. the types and formats of measurement instruments that will provide valid and reliable indicators of this progression.

Lane and Bourke's (2019) systematic review provided an evaluation of the assessment practices in geographical education. There was also an evaluation of research published in 2012 where a content analysis of 18 years' worth of academic publishing was carried out for IRGEE (Kidman & Papadimitriou, 2012). These two examples provide insights into the types of evaluation valued by IRGEE—at the programme level, a domain level—e.g., Evaluation of assessment, and a systematic evaluation of the body of work itself. Evaluation is used to measure how well students are learning, improve education systems, and hold people accountable for the results. Administrators and teachers are both doing their own evaluations to improve school performance and make classrooms more creative places to learn. As the number of evaluation purposes grows, people become more aware of how important it is to fully understand the evaluation needs of stakeholders, acknowledge the advantages of contextual factors, and to choose a method that is responsive to specific audiences and actually gives them useful information.

The most significant aspect of educational evaluation and assessment is that it helps calibrate the efficacy of schooling when done correctly. The secondary advantage of educational evaluation and assessment is that it assists schools and teachers in correctly managing their teaching based on student learning.

The International Charter on Geographical Education (International Geography Union and Commission on Geographical Education [IGU-CGE], 2016, p. 6) poses a number of research questions that can all be viewed from an assessment and evaluation perspective:

1. What geography do students need to know? What are their misperceptions and preconceptions? How can we enhance their geographical knowledge, understanding, and skills?
2. How do we understand students' learning progressions in geography? How are these best calibrated and assessed?
3. Which are the characteristics of effective teaching and learning materials and resources in improving the quality of geographical education?
4. What teaching methods are efficient and effective in improving the quality of geographical education?
5. How can the education of geography teachers be improved to raise the quality of teaching and the levels of achievement in geography in schools?

Each of the articles included in this issue of IRGEE can be aligned to these research questions:

- The paper by Salazara et al. (2022) entitled *The Challenge of Measuring Children's Attitudes Toward Wildlife in Rural India* is an evaluation of an environmental education program and assesses student attitudes. This article is addressing the 3rd research question above.
- Suárez-López and Eugenio's (2022) paper entitled *How is sustainability addressed in primary and secondary education curricula? Assessing the cases of Spain and Portugal* also addresses the 3rd research question above. This Ecuadorian paper is a frequency analysis of topics that provides the evaluation of the curriculum.
- Cho, Kim, and Stoltman's (2022) paper entitled *Design, Implementation, and Outcomes of an In-service Program with Photovoice as a Pedagogical Tool for Geography Teachers* uses South Korean data to relate to research questions 4 and 5 above.
- Larsen, Solem, Zadrozny, and Boehm (2022) paper entitled *Applying aspirations and workforce data to contextualize geographic knowledge for diverse learners* is a methodological article from the USA and responds to research question 4 above.
- Dizon's (2022) paper entitled *Content Analysis of the K to 12 Junior High School Geography Curriculum in the Philippines* responds to research question 3 above.

As Editors of IRGEE, we are delighted to publish this selection of articles that are readily aligned with our 2016 Charter. The alignment of each article indicates that assessment and evaluation are of importance as evidenced by researchers from across the globe refining curriculum and pedagogical practices. We notice that the research community is promoting a "research orientation" (IGU-CGE, 2016, p. 6) among teachers,

and we also notice that the purposes and goals of geographical and environmental education are being evaluated through consideration of the curriculum.

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