

LETTERS TO THE EDITORS

Reimagining GIScience education for enhanced employability

Dear Editors,

It was invigorating to read Dr. Westerholt's commentary on GIScience education [3]. However, the underlying assumption that GIScience should exist as an independent research subject raises some concerns. In this letter, I contend that the interdisciplinary nature brings substantial benefits to GIScience and propose potential solutions for attracting researchers from diverse fields to engage in methodological research within the discipline.

The notion that GIScience should function as a "stand-alone" scientific field poses challenges. Given the prevalence of GIScience programs affiliated with geography departments in North America [2], the debate surrounding the scientific nature of geography [1] must be considered in the discourse on developing a more robust "GIScience identity". With differing research approaches in physical and human geography, achieving a consensus on establishing GIScience as an "independent" research domain becomes arduous. However, rather than perceiving it as a concern, the interdisciplinary nature of GIScience should be regarded as an advantage. GIScience can be marketed as a versatile tool to other disciplines such as transportation planning, civil engineering, environmental resource management, and computer science applications. This broadens the student base and increases enrolment numbers.

Considering that GIS is widely recognized as a powerful tool, it is understandable that GIScience applications have gained significant recognition in research. However, the field also demands continuous methodological development. To achieve this, it is essential to attract talented individuals proficient in computer science and mathematics, in addition to geography. The challenging reality is that undergraduate students in geography often require additional time and resources to master programming and statistical skills. Paradoxically, these are often the same students who pursue research degrees in GIScience. The predicament lies in the fact that if employers tend to favor graduates with a background in computer science or mathematics, the question arises as to why competent students would opt to pursue GIScience studies.

To tackle this reality, I propose the following actions for GIScience faculties:

1. Incorporate the latest technologies into the curriculum to prepare students for the job market;
2. Offer career advice and guide students on applied projects that can strengthen their resumes;
3. Engage with alumni outside academia to stay updated on the latest trends in GIS application;

4. Establish start-up companies to bring scientific knowledge to the market.

By ensuring that GIScience education aligns closely with the demands of the job market, faculties can collectively address concerns regarding talent acquisition for methodological research.

Another aspect worth considering is the necessity of GIScience programs at the undergraduate level. Bachelor's degree holders in GIScience often perform tasks that could be competently handled by individuals with associate degrees. Our graduate programs also offer introductory GIS courses tailored to students unfamiliar with the tool, which closely resemble their undergraduate equivalents with minimal differences. When we contemplate the inclusiveness of the field, we recognize that the comprehensive coverage in undergraduate GIScience education fosters interdisciplinary thinking and collaboration. On the other hand, graduates in this field often lack the necessary professional skills to attain higher-paying positions, such as software developers or data scientists, unless they acquire additional technical knowledge outside of the classroom. Consequently, a liberal arts education could potentially replace undergraduate GIScience programs, allowing students to specialize in GIScience at the graduate level. Exploring alternative domains stimulates students to think creatively and implement multidisciplinary research projects. Moreover, students can maximize their potential by dedicating more time to cultivating their mathematical reasoning skills during their undergraduate studies, rather than solely focusing on learning about GIS tools. This solid foundation in mathematics can then be leveraged in their graduate degrees to advance spatial analysis theories and algorithms.

This letter critically reflects on Dr. Westerholt's discussion about GIScience education, questioning the need for an independent GIScience identity and highlighting the thriving potential of GIS as a versatile tool. Additionally, I propose the bold idea of substituting undergraduate GIScience curricula with a liberal arts education to further enrich the interdisciplinary perspectives within GIScience research. In conclusion, enhancing the employability of GIScience graduates is vital in attracting talent from diverse disciplines to consider GIScience as their future major.

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References

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