

GI in Higher Education:

Geospatial Competence as Cross-Disciplinary Qualification

This note argues that even though GIS are rooted in several spatially explicit disciplines like Geography, Surveying, Planning and others, the teaching of geospatial concepts and methods should (too) aim at transversal integration into the curricula of 'application disciplines'.

Terms: Spatial thinking and spatial literacy are considered general education objectives built during primary and secondary education. In tertiary studies some disciplines include (to varying degrees) the concepts of Geographic Information Science which provide a framework for the methodology of Geoinformatics which in turn is implemented in the technology of Geographic Information Systems.

A majority of GIS applications occurs in application disciplines like resource management, logistics and transportation, public health, demographics, security and many more. Increasingly (institutions and graduates from) these disciplines recognize the need for competences in GI* as an enabling methodology, just like basic math, statistics, visualization etc.

This demand rarely is met in a structured way, solutions include isolated courses for one particular or 'all other' disciplines as compulsory or elective subjects, extramural offerings, methods-oriented summer schools, continuing education or in-service postgraduate distance learning.

While experts for the spatial view as 'fulltime geospatial specialists' from dedicated courses of study will be in high demand for GI projects, SDI development and within the spatial disciplines, it is argued that demand for these core GI areas would be enhanced if more and deeper GI competence across application domains would be actively developed.

Contrary to undergraduate Geoinformatics (or similar) programs which imo only have limited value and very limited career prospects, offering a methodology qualification to students with an already established domain expertise '*who are having a problem and are looking for a solution*' (as opposed to the other way around) is an effective way to work towards GI as a transversal key competence across a majority (?) of disciplines and professions.

Past and current curriculum development initiatives have predominantly focused on 'full' GI qualifications. It is considered advisable to now aim at developing curriculum building blocks for integration into application disciplines. Such an initiative will face numerous challenges as differences in academic levels and traditions, in literacies and numeracy, in backgrounds of visual communication, and in the scope and depth of objectives. A modular geospatial curriculum framework for applications disciplines is proposed as an urgently needed next step towards developing spatial thinking and GI as truly transversal competences.