Continuing Professional Education via Distance Learning – Success Factors and Challenges

A case study based on the worldwide UNIGIS network


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1. Overview

The UNIGIS network of universities has offered postgraduate distance learning in GIS&T since the early 1990s (Molendijk and Scholten, 2006). Since then it has grown from a European consortium into a global network offering different types of academic programmes and qualifications in several languages. This paper discusses insights gained from UNIGIS courses graduating several thousand students in many countries and from very different backgrounds.

Taking for granted the fact of an increasing demand for professional and management skills in the geospatial technologies and GIScience sectors, it is clear that continuing (and in-service) education plays an increasingly important role as first-cycle education does not entirely fulfil the needs of the marketplace. This is particularly true in a cross-sectional methodology-oriented discipline where many experts have graduated from their original ‚application discipline'(e.g. Ecology, Geosciences, Forestry, Marketing, Computer Sciences, Public Health and many others). After some years of professional experience in any one of these fields frequently the demand for deeper knowledge in a key methodology area – geospatial science and technologies – will become evident and lead to a desire for further study and qualifications.

2. Clearly Defined Professional Qualifications

Qualifications and their acceptance depend on a number of factors like:

- Curriculum and syllabus
- Professional relevance and employability
- Track record with alumni and in industry
- Formal accreditation and quality indicators.

These and several more factors are being discussed below in more detail, outlining experience from past courses as well as current developments within and beyond the UNIGIS framework (Strobl, 2004 and Strobl, 2008).

With UNIGIS programmes primarily taken in part-time, in-service mode by professionals already active in the field of GIS&T, learning is directly coupled with professional practice. Employers have and express clear expectations and learners already know from on-the-job experience about their strengths and weaknesses, and thus about deficits to be compensated and gaps to be filled. In-service programmes therefore are undergoing daily practical checks of relevance, and receive immediate feedback regarding topical priorities and curricular completeness.

Anecdotic evidence stated like: ‚*our programme was perfectly matched with my professional needs, I found answers in my studies as issues kept popping up in work*' of course are a misperception, even if teachers are happy to hear such positive feedback. Rather students are sensitized to topics currently dealt with in their study programme, and now recognize issues in their professional practice which otherwise would have gone unnoticed. This kind of awareness building is a core objective of advanced courses, ‚seeing problems' often is considered a more critically important qualification than solving them. The ability of identifying and structuring problems certainly is considered a higher level skill than working through an already defined set of tasks following a prescribed ‚algorithmic' routine.

Reputation is widely considered a critical factor in sustaining success, whether in education or other knowledge-centric activities. A documented and evident track record of delivering what has been promised, of fulfilling the personal and professional objectives of students, and above all of advancing the professional capabilities and careers of alumni are important factors in attracting and convincing future applicants to

pursue a particular education track. Professionals interested in taking up the UNIGIS programme routine get in touch with current students and alumni to check their own expectations with their predecessors' experience.

The UNIGIS programme has given birth to a loosely knit alumni network (‚Club UNIGIS'), based on its strength of *not* having a clearly defined operational mission. Rather, this alumni network autonomously collaborates on a broad range of topics from simple (or not so simple) technical support to information about job offerings, jointly tackling more complex projects or looking for particular expertise on a given subject. There is a lot of giving and taking across this network, recently MVP's (most valuable professionals) have been identified by their generous contributions through sharing advice and offering support. All this works without an organisational framework or institutional infrastructure, demonstrating the power and effectiveness of online communities sharing a common background (mastering a challenging educational experience) and set of interests defined by their professional environments.

3. Curriculum Development

Particularly the development and implementation of curricula and the development of course content and media are continuous challenges in a rapidly evolving area like the geospatial sciences. This requires cooperation with institutions across many disciplines and the integration of experience and care for regional differences. UNIGIS has been and still is very actively involved in multilateral curriculum development projects (e.g. the originally US-based Body-of-Knowledge – DiBiase et al 2006) aimed at firmly anchoring current and future courses in all relevant disciplines and professional practice.

For the entire UNIGIS network, a common core curriculum is a key constituting element, a strong common denominator binding programmes in a variety of languages, institutional and legal frameworks and variants in their mode of delivery together. In a continuously evolving environment like GIS&T, a curriculum cannot be considered as being set in stone, it rather has to adjust to innovation, demands from professional practice, and an expanding set of application domains. Rapid change, though, would create confusion and organisational challenges, and unstable expectations regarding educational outcomes. Therefore managing curricular change is an ‚art' of balancing adoption and innovation with a certain level of stability and continuity.

Curriculum development is a major ‚export article' of UNIGIS, as partners in the network have been and still are involved in curriculum development projects around the world (see e.g. Car and Strobl 2007). Typically conducted as consortia projects in particular regions, and frequently co-funded by European Commission programmes, new curricula (plus their implementation) are set up at institutions launching or enhancing education in GI&T. Each of these projects provides valuable feedback and suggestions for modifications to the UNIGIS common core curriculum, and frequently offers opportunities to enhance the UNIGIS network itself.

On a more general level, work on academic curricula offers a much needed ‚distancing' and abstraction from the everyday practice of teaching and tutoring. Taking this higher level view of what is being taught, why, and with what expectations benefits instructors by providing an important background to their daily routines.

4. Distance Learning

The distance learning / eLearning / online learning mode of delivery clearly is the key factor why prospective students choose this type of programme. Compatibility with continued professional activity, family and other social obligations, mobility restrictions etc. are the driving forces behind the emergence of distance learning as a leading organisational model of continuing education.

Over several years it has become increasingly evident that there is no one-size-fits-all model for organisation and delivery of postgraduate qualifications in GIS&T (Howell et al 2003). Many students aim at a well-founded and prestigious MSc degree, while others prefer the more directly applicable outcomes from a professional diploma. Full distance learning serves part-time students well while there is a growing demand for ‚going back to school' for a condensed full-time study experience (which might be split over several periods) or even entering postgraduate online learning immediately after undergraduate studies.

The organisation and communication concept behind a distance education offering clearly are a core success factor determining the long term sustainability of programmes like UNIGIS (Molendijk et al 2008). Several factors deserve attention, like

- Combination of advantages of centralized course delivery with regional access to support
- Leveraging of novel Internet-based communication facilities to really ‚stay in touch'
- Balancing an accepted core set of knowledge and skills with flexible options to enable individual choices of elective subjects.

While distance learning clearly is a ‚unique selling proposition' for an academic programme, it is not a value per se. It is valuable, if it enhances the accessibility of continuing education for a target group of learners. The actual USP therefore is the catering to the needs of a mature, well motivated and professionally active community of learners who are less mobile due to their job locations as well as social commitments. Bridging distances, and facilitating communication by online media is a very helpful element in allowing access to continuing education.

5. Quality Assurance

Regional differences in educational systems, cultural expectations, online access and levels of prior learning are significant across the globe. Maintaining a common standard of qualifications therefore sometimes turns out to be an impossible objective and likely will be a challenge forever. Still, the common denominator between North America and Central Asia, between Europe, Latin America and the Indian subcontinent is larger than it might be expected, not the least due to the unifying and ‚standardizing' force of a global software industry and common issues in professional practice.

Quality Assurance is an permanent challenge in academia, and even more so in a distributed set of programmes being taught across all boundaries of cultures, languages, professions and levels of economic development (ENQA 2005). UNIGIS (Car 2008) has implemented a clearly defined framework of goals, tools and indicators facilitating the integrity, monitoring and continuous improvement of academic qualifications awarded. These start from a common core curriculum referenced to established benchmarks, standards for teaching and performance assessment, and cross-programme checks like joint degrees, credit transfer options and mutual evaluations.

QA is not a one-time procedure, not just one step in a process chain, but rather a continued set of cross-cutting activities and perspectives enveloping the entire education process including the targeting, design, development, implementation, delivery, monitoring and assessment of outcomes (IHEP 2000). As the value and the validity of education is determined by its manifest and perceived quality (Finnie and Usher 2005) QA is at the core of UNIGIS and a continued priority for everybody involved.

6. Assorted Challenges

The varying background of students (as opposed to ‚vertically organised' higher level qualifications directly continuing and expanding first qualifications, like an Ecology Master's built on top of a Biology Bachelor) poses a particular challenge to the design and implementation of postgraduate, and even more for continuing education programmes, as entry requirements and assumed prior knowledge differ considerably.

As a major asset continuing education students tend to have professional experience, which means they already bring their questions and a clear sense of mission to the study programme. This high level of motivation is balanced by the above mentioned fact of students having a broad range of sometimes very different backgrounds. This, though, helps with moving from a ‚centrifugal' concept of ‚knowledge dissemination' to a collaborative vision of knowledge creation. Virtually any intake or other larger group of students collectively exceed their instructors' skills and knowledge, substantially changing teachers roles (which is frequently the case in adult education). Teachers are challenged as moderators and coaches, helping with building knowledge instead of dispensing it. Over time, while approaching advanced stages in their programme, students notice that they increasingly learn from and with each other. Teachers then are less in a central role, but rather serve as facilitators in a semi-autonomous educational process.

Likely the most important success factor, and challenge, is the evolution of UNIGIS into truly global qualifications recognized by a wide range of industries and professions. This is due to the geographically distributed, multilingual programme offering by a set of well integrated institutions which is based on a common framework, joint courses and even international summer schools, use of common platforms and GIS software and, most importantly, a large body of tightly cooperating faculty from across the globe.

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