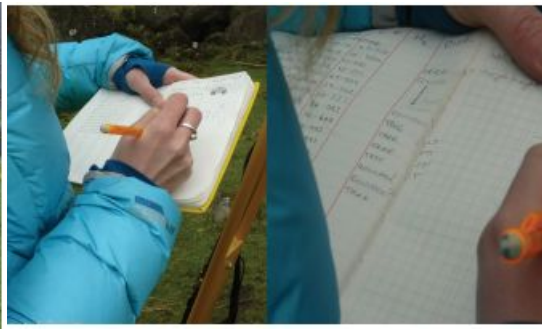


The Bewildering World of UK Higher Education



Higher Education in the UK is currently in a state of flux, and this is particularly true of the geospatial sector where undergraduate numbers fluctuate and apprenticeships are a disruptive influence. Here we look at the changes and the views of some of those involved.

It is perhaps not surprising that the recent death of the world renowned physicist, Professor Stephen Hawking was reported on the front page of every newspaper in the UK, as well as many globally. However, whilst once it would have taken the death of such an eminent academic in order for Higher Education (HE) to generate news headlines at all, things seem to have changed of late. Whilst once restricted to the inside pages of the *Guardian*, HE, whether it be political wrangling over student fees, controversial appointments to the Office for Students, or the inflated size of Vice Chancellor's pay packets, now regularly features as headline news. Indeed, with the inherent instability of the current UK Government, right now seemingly only Brexit and the NHS are political issues more capable than HE of monopolising the front pages.

It will doubtless garner little in the way of sympathy with the many "real-world" professionals reading this, but there is a feeling from those working in the sector that HE is, rightly or wrongly, under attack currently. The recent introduction of the Teaching Excellence Framework (TEF), which saw UK universities awarded a Gold, Silver, or Bronze badge, will, if Ministers have their way, soon be augmented with a Knowledge Exchange Framework (KEF) that will measure a university's "efficiency and effectiveness in use of public funding for knowledge exchange" [1]. With all of this sitting alongside the now accepted, if much ostracised, Research Excellence Framework (REF), UK academics could be excused for wondering when they are actually supposed to undertake the teaching, research and knowledge exchange upon which they are continually being assessed. Throw in other factors such as the Prime Minister's recently announced post-18 education review [2] and the currently disputed pension changes for staff in pre-92 institutions [3], and it seems Hawking was right when he stated, "we live in a bewildering world".

Degrees are Crap

At the recent North East Satellite Applications Centre Annual Conference in Durham, a session on "game-changing emerging technologies" ended with the four speakers, all initiators of recent start-up companies in the North East, participating in a Q&A discussion. A delegate asked them whether they were able to find the skilled workforce they needed in the region, and an interesting discussion into the value and state of all levels of education ensued. Perhaps the most memorable comment of the day came from one panellist, himself qualified to M-level, who declared, "Degrees are crap". His argument was that universities lack any meaningful connection to, and therefore fail to deliver for, the needs of industry. One local post-92 university, which in the same discussion had claimed to be better than their pre-92 counterparts at just this, had sent a large group of students to the conference. Their academics present were no doubt struck by the irony when one of their £9k annual fee-paying students stood up and agreed wholeheartedly with the "degrees are crap" statement. One suspects that particular university will not be sending any students to the 2019 event!

Amusing anecdotes aside, some valuable and constructive observations were made about the future requirements of education that day. Disruption, it was argued, is urgently needed in HE, and that disruption should be driven by business need. Conversely, it was also recognised that those involved in driving industry forward are more often than not too busy to put the requisite time into education to stimulate that disruption. With the observation that artificial intelligence (AI) and machine learning are now at a tipping point of changing everything, it was recognised that graduates would need to be adaptable and innovative if they are to survive in the job market of the future. No longer are people training for one job for life, they need to evolve with the expectation of having to re-align their careers on numerous occasions over the course of a working lifetime.

This observation was reinforced by a recent Institute for the Future report for Dell Technologies [4], which predicts that 85% of jobs that will exist in 2030 are yet to be invented, such is the transformative impact of emerging technologies such as AI, augmented and virtual reality, home robots, and cloud computing. With Hawking's prediction that "the development of full AI could spell the end of the human race," it would therefore seem more important than ever that the place of a University is to

provide graduates with an education for life. Such education needs to develop academic and personal skills that enable graduates to become adaptable, resilient and thus able to respond to the challenges they will face as their careers progress.

Whether enforced top-down change from Ministers, some of whom arguably place their own short-term career aspirations at the forefront of their thinking rather than the long-term wellbeing of students or universities, will generate the disruptive change that is regarded as needed from UK HE remains to be seen. However, for any credible “geomatics” or “geospatial” UK degree programme to survive, offerings will inevitably also need to evolve continuously. Input from Industrial Advisory Panels, together with other forms of business engagement, will be more important than ever to help inform and shape relevant programmes that are both attractive to potential students and relevant to the needs of future employers.

In this regard, the recent introduction of degree apprenticeships offer exciting, if somewhat daunting, possibilities for university-industry collaboration and the potential creation of a learning and teaching environment that is aligned to business needs. In this respect, the recent announcement regarding a Level 6 Geospatial Mapping and Science Degree Apprenticeship [5] should be welcomed and explored further in the form of innovative industry-academic partnerships.

Data is King

All that said, noticing Gordon Johnston’s “data is king” mantra from the last issue of GW [6], it could be argued that some elements of HE do not need radical change. I write this over Easter Bank Holiday weekend, whilst simultaneously readying myself for Newcastle University’s annual Stage 1 residential surveying field course in the English Lake District. Prior to departure, we occasionally joke with the students that Borrowdale is to surveyors what the Brecon Beacons is to the SAS. It is hardly comparable, but being located close to the wettest village in England, we tell the students that if they can survey in Borrowdale, they can survey anywhere. One to propagate “Generation Snowflake” [7] it certainly is not, but the team and life skills the students acquire on this module help to shape them not just for the remainder of their degree programmes, but also for the rest of their careers.

Whilst now shorter and having made some technological concessions over the years (electronic total stations, rather than T2 theodolites, have long since been the order of the day, for example), this stalwart module of Newcastle’s Surveying and Mapping Science / Geographic Information Science undergraduate degree programmes largely remains a back to basics course. In a rare escape from modern day technology, we are even still blessed with a lack of mobile phone signal for the course’s eight day duration. Data logging is still conducted using a pencil and a field book, calculations are performed manually, and the resultant plan and contour plot is 100% hand drafted.

This approach may all seem antiquated in the era of big data, and perhaps it is really down to longstanding academic kakocracy that the module has not evolved more radically over the years. However, our theory goes that only by spawning and nurturing raw data in this manner, experiencing first-hand how those hard-earned angle and distance observations blossom into OSGB36 coordinates that are then devotedly transferred into graphical form, can our graduates really begin to love geospatial data and therefore the big data approaches now being exercised in modern geomatics practice. In such a way, we hope to continue to produce graduates for whom, to borrow another quote from Hawking, “with the technology at [their] disposal, the possibilities are unbounded”.

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References

- [1] <https://bit.ly/2JUK26p>
- [2] <https://bit.ly/2ELoQwX>
- [3] <https://bit.ly/2HABEux>
- [4] <https://bit.ly/2u46JgQ>
- [5] <https://bit.ly/2qL0VaR>
- [6] <https://bit.ly/2JWC7FM>
- [7] <https://bit.ly/2qIkcuI>