

An investigation of the structure of, and demand for, learning delivery systems to further enable flexible access and customised provision within postgraduate and continuing professional development programmes in Environmental Science.

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Collaborative Academic Developments

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Background and rationale

Within the context of Lifelong Learning it has been increasingly recognised that the new constituencies of learners now entering Higher Education (HE) will place different demands than hitherto upon the institutions and the programmes delivered.

In the Division of Environmental and Analytical Sciences at the University of Wolverhampton (UW), it has also been noted that the typical participant profile for some award programmes is increasingly reflecting this national trend. This has been growing particularly within the masters programmes where the significant numbers of post-experience candidates render the cohorts much more disparate than previously in their needs and demands from the course provision.

The growing importance of demand-led provision has been further driven by an increase in the upskilling needs of the regional economies which, in turn, are generating an influx of new constituencies of learners into HE. For the West Midlands region, and for UW, this is a particularly important issue given their joint commitment to economic and social regeneration, and the latter's role as a major employer in the region. Locally, this is a particularly pertinent issue for the field of Environmental Sciences where there have been clear statements of need regarding the development and management of the environmental economy. (Advantage West Midlands 2000).

A growing awareness of the situation has been gained from a number of sources including:

- experiences from small-scale pilot programmes carried out under the aegis of the Continuing Vocational Education Initiative at UW
- informal feedback from participants on current masters programmes
- information from local employers federations (e.g. ADAPT and WMRTSD) and Regional Skills Councils

This information, although consistently occurring, is at best anecdotal and unqualified. It was proposed therefore that this project would attempt an examination and analysis of the individual learning and learning delivery needs of that body of Vocational Lifelong Learners (VLL) for whom standard postgraduate provision is becoming no longer wholly applicable.

The investigation targeted those constituencies of participants whose prior experiences and current employment situations might cause them to place particular and differing demands upon the masters(MSc), postgraduate(PG), and continuing professional development(CPD) awards in Environmental Sciences at UW.

The research

The project was intended, initially, to gather data, which would inform future provision for the following masters award programmes: Land Reclamation; Environmental Science; Environmental Management; Environmental Technology.

Accordingly, the research sample was to be drawn from:

200 past students

90 current students

30 employers

...all of whom had connections with the nominated MSc courses.

In the event, not all potential respondents were accessible and, in total, some 140 participants were contacted either by post or e-mail for the main investigation.

The research was carried out in four stages: preliminary desk research and searches; semi-structured interviews; main postal survey; analysis and evaluation of results.

Much of the information for the preliminary research had already been gleaned informally, but further investigation suggested a pattern of features which characterised the nature of the potential participants for the targeted masters award programmes. These cohorts were becoming increasingly disparate in terms of:

- geographical location and accessibility
- levels/types of achievement/attainment on entry
- individual, specialised pockets of expertise
- narrow ranges of higher level skills
- employment commitments and patterns of working
- preparedness for learning

In order to further illuminate these issues, and to identify the major constructs for the main survey, a set of 12 semi-structured interviews was carried out with a sample drawn from current and past students and employers. The interview was designed to elicit views and information about the masters and postgraduate programmes, in terms of meeting the needs of the participants or the demands of employment. It comprised 6 sections covering (briefly): the reasons for further study; suggestions for changes to, and needs from, the programme; successful aspects; implementation issues; individual commentary; and reasons for non-completion.

The instrument was sufficiently flexible to allow for free expression and to accommodate any pertinent issues, whilst containing prompts for the interviewers to guide respondents around topics already identified. The major constructs which emerged and those which provided a basic structure for the main survey, are shown as Appendix 1.

It may be of interest to note here some of the preoccupations and views held by the interview respondents regarding postgraduate programmes generally. These issues, listed below, were incorporated into the items for investigation for the final form of the main survey instrument:

- enhanced career prospects
- broadening perspectives

- more practical work
- enhancement/inclusion of particular subject areas
- learning/study skills
- induction to study
- cultural contexts
- linkage to professional bodies
- flexible access
- access to facilities for part-time students
- timing of classes and activities

For the main survey instrument a questionnaire was designed and, after standard piloting and approval procedures, this was sent out to 140 students (current and past), including some 17 students overseas. A questionnaire of complementary design was also sent out to a selection of employers of past and current students.

The outcomes

Within the relatively short space of time allocated for the return of questionnaires, 47 completed documents were received, including 7 from overseas. This represented a 33.6% response rate. The response from employers was, by contrast, disappointing, with only 3 returning the document. However, given the inevitable changes within organisations and the difficulties inherent in locating appropriate members of personnel, this was not altogether unexpected and other means of accessing employers was eventually devised from the questionnaire data (see later).

Given the timescale and the imperative to feedback quickly, it was decided to go ahead with the data analysis without further efforts to increase the response rate. It is not possible here to give a full account of the findings; these may be accessed through the full report of the research which will be available in due course. However, it is possible to briefly describe some of the inferences and these will give some idea of the feedback received.

Of the total respondents (n47), part-time students comprised the majority (n40) with returns from across all targeted programmes. Of these, 40% had completed the full MSc award, 37.5% were progressing, and with 22.5% having completed an intermediate award.

A substantial proportion of the responding sample (40%) declared themselves to be 'returners to learning', having had a significant break from education/training. This may indicate to UW that some cognisance should be taken of the entrants' level of 'preparedness' for undertaking the programme. It also signals the possible need to set in place related strategies for the provision of early-stage diagnostic and supplemental training in e.g. study skills.

Continuing Professional Development (CPD) for updating or career enhancement seemed to be a prime reason for participation in the programmes, with knowledge acquisition rather than specific skill development being perceived as the key to these goals.

The theoretical aspects were seen as 'very useful' or 'useful' by 87% of the respondents; likewise the practical applications of theory, with 77% in favour of this. Within the open parts of the questionnaire, comments indicated that participants expect high levels of current information; and it was interesting to note that there was some dissatisfaction with the practice of incorporating level 3 modules into the masters courses.

In terms of the skills training offered on the programmes, the participants' approval was skewed more towards the 'useful' rather than the 'very useful' descriptors. Overall, the

participants seemed to attach more importance to knowledge rather than skills acquisition. In general, fieldwork was valued more highly than either laboratory work or specialist scientific skills training. Similarly, course activities to promote development in management, research and communication skills, were not so highly valued as the theoretical aspects.

Other aspects which were frequently mentioned or indicated, concerned timing and methodology of learning delivery, with distance learning featuring strongly in responses. There were also suggestions for topics which were considered worthwhile for inclusion in the programmes.

Benefits and evaluation

The research exercise was not designed to produce the type of data which would enable statistically significant comparisons for generalisation, nor was it related to strict hypotheses. Rather, it was intended to illuminate the situation regarding the variances in the constituencies of learners recently engaging in the targeted programmes, and in this it has been quite successful.

A substantial amount of useful information has been obtained which, has not only reinforced the original anecdotal evidence, but has also extended the range of issues to be addressed.

The data produced will benefit the formal continuous course improvement of the existing PG awards within Environmental Sciences. It will also inform the divisional agenda for the creation of CPD programmes in Environmental Management, which have increased currency in terms of the validity of their curricula.

To achieve this, the division will need to engage in dialogue with a wide range of employers and related organisations in order to fully explore their needs from HE. Many past alumni are now in positions of responsibility within the wider context of the environmental industry, and those who responded to the survey will now provide many of these valuable contact points with employers.

Future developments

Within the culture of widening participation, the Division of Environmental and Analytical Sciences at UoW has, with some support from the CVE initiative, responded to local and regional needs for the upskilling and progression opportunities required by both employed and aspirant labour-market returnees. It is also anticipating a response to the local employment demands of the national Agenda 21 on Sustainable Development.

The research strategy outlined here is seen, therefore, as a key element in the identification and recognition of the barriers to accessing upskilling provision, which are faced by many participant constituencies. The information gathered will form an interlinking facet of a set of complementary strategies for developing flexible access to learning which include:

- strengthened employer contact/collaboration, whereby the market for non standard and customised learning programmes might be accessed and accommodated
- a follow-on research project aimed at creating partnership networks with employers, in order to develop dedicated curricula to meet the current demands of the regional environmental economy

It is also worth noting that, although the scale of this research dictated that the investigation should be carried out in the context of Environmental Sciences, the issues are common to all programmes involving Vocational Lifelong Learners. With some amendment to the

subjective examples within some of the questionnaire items, the research instruments and strategies could be applied to many educational disciplines within HE.

References

Advantage West Midlands (2000) *Environmental Economy of the West Midlands* a draft report produced in conjunction with the Environment Agency.

ADAPT (November 2000) Proceedings of the ADAPT Conference *Learning to ADAPT: Solutions for Business*.

WMRTSD West Midlands Round Table on Sustainable Development: a regional tier of the National Sustainability Commission.

APPENDIX 1 – Major Construct Framework for Main Survey Instrument

