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A blended-learning foundation degree in biomedical sciences

Foundation degrees are now a decade old and provide ideal support for the developing associate practitioner role in laboratory medicine. Here, Chrystalla Ferrier, Martin Parry and Federica Oradini give a University of Westminster perspective.

Following *Agenda for Change* and the development of the Band 4 associate practitioner role in some health professions, there has been interest in the development of foundation degrees to provide the knowledge required for this grade. The associate practitioner post offers possible progression for support workers, provided there is a requirement in the workplace for clearly defined competences that are distinct from support workers and registered staff. The possible role of foundation degrees in this career structure has been described previously.¹

NEW COURSE

From September 2009, the University of Westminster will offer a foundation degree in biomedical sciences (FdSc BMS) to meet the needs of associate practitioners or individuals preparing for such posts. During course development, we have built on the experience gained in offering the part-time BSc in Applied Biomedical Science, particularly in relation to its important work-based learning components.

Additionally, the course team established an employer liaison group to advise them on curriculum, teaching and assessment of the FdSc BMS. As a result of discussions in this group, we were able to identify study skills support and flexible course delivery as key areas of the course that required prioritisation during its development. Feedback from the group has enabled us to tailor

the delivery and content of the course to meet the needs of both employer and employee.

WHAT IS A FOUNDATION DEGREE?

It is almost 10 years since foundation degrees were introduced by the Department for Education and Skills as a means of addressing the skills and knowledge requirements of the workforce. They aim to provide opportunities for learners who previously may have missed studying for a higher-level qualification. The characteristics of such degrees are described by the Quality Assurance Agency (QAA) in its publication *Foundation degree qualification benchmark*,² where it is stressed that these courses should meet national employment needs as well as offering continuing professional development for those already in post.

A foundation degree can be used as a standalone qualification or one that enables successful students to progress to a full Honours degree programme, where their foundation degree credits will count towards

their final award. In the present course, we have incorporated other features described in the QAA's benchmark, including flexibility to meet the changing demands of the student's employer; the development of relevant skills and meaningful employer involvement.

It is important to note that foundation degrees are quite distinct from foundation courses/access courses, which are pre-degree Level 3 qualifications. Foundation degrees typically are composed of Level 4/5 credits.

BLENDED LEARNING AND THE VIRTUAL ENVIRONMENT

The flexibility mentioned previously should not only allow the student to 'earn and learn' but hopefully will also provide the employer flexibility of staffing arrangements, and we aim to achieve this with a blended-learning approach. This aims to combine some of the benefits of a traditional taught course with the flexibility afforded by technology-enhanced delivery.

Our blended-learning delivery mode, although mainly eLearning from a remote site, also incorporates short block attendance at Westminster for precourse induction, written examinations and annual laboratory-based practical sessions. The third element of this blended approach is work-based learning, which is integrated with the other methods of delivery to eliminate the need for the traditional 'day release' mode of study.

The core material which forms the 'knowledge base' for the modules will be available electronically. We will be using a variety of media to deliver the teaching materials and assessments, from Word and PowerPoint documents to video clips and podcasts.

The University of Westminster's virtual learning environment (VLE),³ known as Blackboard, is the main platform through which students have access to course resources, and some examples of its pages are shown in Figure 1.



Fig 1. Pages from the Blackboard VTE environment.

All students are issued with a username and password, which enable them to access Blackboard from any computer, whether that be in the workplace or at home. Blackboard not only provides students with online access to teaching material but also allows them to complete interactive assignments, view their marks and receive feedback on marked assignments.

Students also have access to a vast range of electronic resources via the university's library repository, known as infoLinx. This enables students to access eBooks, eJournals and a multitude of online databases from any location. Web 2.0 technologies such as blogs, wikis and podcasts are also exploited to enable students to feel connected to the course, the academic tutors and the students' online community.

Students will also be able to maintain contact with their university tutors by email or through discussion boards and be able to participate in chatroom discussions with fellow students. Blackboard will also be used by university academic tutors to monitor student progress and provide appropriate tutorial, technical and administrative support.

Given the nature of the course, considerable emphasis will be placed on the need for students to take responsibility for their own learning, as self-directed learning is regarded as a vital component of our teaching and learning strategy. Students are expected to underpin their learning by private study and we will encourage students to read extensively.

ABOUT THE COURSE

The course can be completed in a minimum of three years' part-time study and a successful student will be awarded the Foundation Degree in Biomedical Sciences. We believe that compulsory attendance at Westminster for induction is vital for students at the start of their first year, as this will enable them to complete their registration, meet tutors and students on the course, practise using Blackboard and establish firm lines of communication with university staff.

The component modules are listed in Table 1. The total of 240 credits will be available over the three years, of which 105 (equivalent to seven modules) involve some learning in the workplace. The Study Skills module at the start of the course is designed to give instruction in the use of Microsoft Word, Excel and PowerPoint, academic writing and the numeracy skills required for the course. In beginning the course with this module, we aim to ensure that no student is at a disadvantage from having limited prior knowledge in academic writing, computing and mathematics.

The entrance requirement for the course is a minimum of one A-level pass in a related science subject for students under 21, although we will be flexible when considering

Table 1. The University of Westminster Foundation Degree in Biomedical Sciences course content.

Year	Module	Credits	Workplace learning	University practical
1	Study Skills	15	No	No
1	Concepts in Biosciences	30	No	Yes
1	Introduction to Human Anatomy and Physiology: 1	15	No	Yes
1	Delivering Healthcare: 1	15	Yes	No
1	Laboratory-based Learning: 1	15	Yes	No
2	Introduction to Human Anatomy and Physiology: 2	15	No	Yes
2	Cell Science	30	No	Yes
2	Laboratory-based Learning: 2	15	Yes	No
2	Laboratory-based Learning: 3	15	Yes	No
3	Infection and Immunity	15	No	No
3	Principles of Laboratory Diagnosis	15	No	No
3	Project Design	15	Yes	No
3	Laboratory-based Learning: 4	15	Yes	No
3	Delivering Healthcare: 2	15	Yes	No

equivalent qualifications. However, we also wish to encourage applications from more mature students with appropriate work experience in biomedical science, and each applicant will be considered on their own merits. As the healthcare workforce is diverse and multicultural, candidates with overseas qualifications are encouraged to apply.

THREE-WAY PARTNERSHIP

As is applicable with all University of Westminster courses involving workplace students, study success is built on motivation and time management skills. However, these are not sufficient without the necessary support from both university and workplace managers and training officers.

We will encourage students and employers to contact the university at any time during the course to discuss problems that may arise and will provide systems support, learning resources and links to additional material. In addition, high priority will be given by the university to marking and providing feedback for completed assignments by agreed deadlines, as we understand that timeliness and content of feedback influences student motivation and progression. It is important that employers provide students with the necessary time and resource support in the workplace to allow them to study the modules and complete the required workplace assignments.

Problems with meeting course learning outcomes and satisfactory course completion are sometimes encountered by work-based students as a result of poor communication between the education provider and the workplace. This is often a result of unclear identification of roles and poor communication between individuals. To avoid this, we will establish a three-way partnership by means of a learning contract that outlines the responsibilities of the student, the workplace and the university, as well as providing contact details for key individuals.

WHAT HAPPENS AFTER THE DEGREE?

Students who complete the foundation degree successfully have the option to use it as a standalone qualification or as the basis to progress to an Honours degree in biomedical science. At Westminster, conversion to the Honours degree will require a further two years of day release study to complete more Level 5 modules, the Level 6 modules and a laboratory-based research project.

We hope that the blended-learning approach for this foundation degree will meet the needs of students and employers by providing a flexible means to achieve a transferable high-standard qualification. In view of the current proposals for the career structure of healthcare professionals outlined in the *Modernising Scientific Careers* project, such flexibility may be essential! ■

REFERENCES

- 1 Ferrier C, Snewin S. Associate practitioner biomedical scientist: an employer's toolkit. *The Biomedical Scientist* 2006; 50 (3): 253-4.
- 2 Quality Assurance Agency for Higher Education. *Foundation degree qualification benchmark*. QAA 065 10/2004 (www.qaa.ac.uk/reviews/foundationdegree/benchmark/fdqb).
- 3 Saunders G, Oradini F. Technology-enhanced learning in the 21st century: supporting the attainment of an old paradigm or developing a new one? *Journal of Leadership and Management in Higher Education* 2008; 1 (1): 29-46.

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A report of progress will appear in a future issue of *The Biomedical Scientist*.