THE ONLINE MSC IN DIABETES AT THE UNIVERSITY OF BEDFORDSHIRE

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Abstract

This paper describes the evolution of the online MSc in Diabetes at the University of Bedfordshire. It charts the prospective move into the overseas market and highlights some of the expected challenges that this subject might face in a multilingual market and some of the challenges that will continue to be factors. We explore the notion of technology cultivating a learning atmosphere of global interconnectedness, through the use of Web 2.0 and the germination of social networking, collaboration and interoperability. With this approach in mind we hope to exhibit good practice in the use of technologies as tools for learning.

Introduction

By the time this paper is printed, the University of Bedfordshire should have completed its move from a Mode 2 delivery for the MSc in Diabetes, to a Mode 3 delivery of the same. In essence this means a radical shift from a blended approach (mainly face-to-face teaching, augmented by tasks set online) to a fully sustainable online delivery, using a range of tools and teaching and learning strategies. This project, as might be expected, has taken some time to evolve, and is regarded, even now, as an organic piece of work that can be updated, adapted and edited as the needs arise. At all times full attention is paid to the feedback of our students and our academic peers.

Preparing for the transition to Mode 3 necessitated a fresh look at the existing programme of delivery. Although by this point (2013) the Masters had been running with a blended approach of face-to-face and distance learning modules for several years (since 2006), it was felt that more was needed for a distance learning package than re-using the same materials. To this end we embarked on a full scale work-through and review. Despite the fact that the content had worked well in recent years for its original purpose, it was soon apparent that it would not stand up to the different (and rigorous) requirements of a distance-learning course. Too much depended on what would henceforth be absent: namely a lecturer's physical delivery of the programme. In other words, what had suited one project more than adequately for a number of years required a new approach to take into account the absence of human beings (apart from as virtual or asynchronous presences).

The existing material went through an edit for consistency, layout, presentation, and to ensure that the facts were current. (The last of these considerations, of course, must always be borne in mind with material about health issues.) Conscious of recent estimates that readers only absorb 25% of what is presented on screen, we made sure that the text was not too "wordy"

and that key or important statements (where appropriate) were substantiated with relevant illustrations and/or diagrams. In addition, because there was an available budget, and (theoretically) time to film some introductions, we decided to video some talking-head shots, using the key practitioners who deliver those particular slots face-to-face as speakers, to introduce key chapters of the resource and to implement and enforce the cognitive alignment and complementariness further. We have also embarked on the learning technologies of discussion boards and wikis, and although it is too early to judge their inclusion into the programme a success or otherwise (at the time of writing the course has not been launched), we are confident about their future use as effective tools, based on their inclusion in other learning packages.

We had come to the conclusion that distant learners expect quality interaction, both with their peers and with their tutors. For this reason alone the upgrade to the existing programme would have been seen as a good idea; but there were other factors that informed our decision-making processes – other reasons why we decided to move into the exciting realm of the unknown.

Evolution of the Project

The MSc in Diabetes is one of a rapidly-growing number of resources offered by the University of Bedfordshire that has evolved via a recognition that what used to be the "traditional" learning experience can (and perhaps, must) be enriched and transformed through the use of technology, irrespective of the challenges that a change in approach will usually present.

The roots of the project lie in 2006, at which point the programme operated as blended learning for both overseas students and those based in the UK. The course had been designed to enhance the academic capabilities, including clinical research methodology skills, of medical and healthcare practitioners, and to meet their continuing professional development needs. It aimed to equip healthcare practitioners with the knowledge and skills to engage positively in a wide spectrum of academic activities. On successful completion of the course, the learner was expected to have developed a wide range of skills, knowledge and attitudes with which to undertake greater involvement in clinical practice and research activity, using an evidence-based framework. The student was expected to have developed a critical, analytical and reflective stance towards medical education and its practice; and the course included a combination of face-to-face study days and independent study, as well as various assessment methods.

In addition to these excellent reasons for enrolment, the Bedfordshire and Hertfordshire Postgraduate Medical School has a strategic campus with links to all the major clinical and academic centres in both counties. The Institute of Diabetes for Older People (IDOP) was launched in May 2008 and has undertaken some key studies with funding from the Department of Health and the European Union. The course is delivered almost entirely by senior NHS specialists and all units have practical guidance on diabetes care in most clinical settings. A student on this course will study topics such as research methodology, project preparation, evidence-based medicine, ethical and legal aspects, and of course, detailed areas of study relating to the specialism of

diabetes. The teaching team was and is led by Professor Alan Sinclair, who is a leading international figure in medicine and diabetes; he directs a major programme in diabetes research and also leads on several national and international initiatives, and is the recent winner of the International Association of Geriatrics and Gerontology (IAGG) 2013 Presidential Award, which is the highest honour that the organisation can give to a doctor.

It is not difficult, therefore, to infer that the MSc in Diabetes had a very good pedigree. The challenge was, therefore, to answer the following questions. How would we replicate the student's learning experience once we had removed the face-to-face element? How would re-contextualise the pedagogic environment? How would we assess our students from afar? Whither group work? How would we make the learning experience more than a predictable and unattractive collection of PowerPoint slides loaded up on to a website? How would it meet our *own* standards of content and presentation, long before it was set to meet those of an ever-increasingly demanding student body, each one of whose members is required to pay more for his or her education than at any time in the past?

In other words, how would we make this work?

Relevance and Importance

In order to make a large-scale project like this successful, it is imperative to acknowledge, first, the need for it existing as a project in the first place, and second, the possible impact that it will *have* as a project. Although both of these considerations are somewhat abstract notions, the scientific and biological data on which they depend are easily available to anyone with an interest in the subject and a few minutes to spare on a spell of light research on the Internet. In other words, while planning a large-scale, expensive educational project such as a Masters in Diabetes for online learners, we had to ensure that, in addition to there being sufficient learners who would want to enrol on the course (a respectful bow to market forces), that behind every learner who would want to enrol there was a problem worthy of the enrolment and something to learn that would drive the very need for the resource in the first place. Behind every learning resource (on a subject regarding an issue of public health) is a problem to address that ensures that momentum will take it through the mid-project doldrums that are frequent symptoms of large-scale ambitions, all the way to fruition and an ebullient student experience.

This, at least, is the plan. As far as the recognition of a need to address is concerned, the relevant web pages and journal papers are legion. To take but one recent example and a tidy précis of the gloomy global situation: The Banting Memorial Lecture 2010. According to the authors:

> Type 2 diabetes is pandemic. This was not the case in the 1950s but it is now. Sixty years ago, Type 2 diabetes had a prevalence of less than 1% in almost all countries of the world (and indeed in some communities was scarcely present at all)... The low prevalence increased in the developed world; it is now 4% in the UK and well in excess of 8% in most states of the USA. In the emergent economies,

> prevalence ranges up to 50% (urban elderly) of the population... [T]his means that in the UK one in 25 adults has diabetes, while in the USA the figure is one in 12. The problem is even greater in the developing economies, with diabetes being found in up to one in five adults. (Matthews & Matthews, 2010, p. 2).

Worldwide problem accepted (for it cannot be denied); the ambition was to address the question of "why go online?" Beyond the concept of student choice, what did we hope to achieve by offering an entirely online provision? What was the point? One might argue – with another respectful bow to market forces – that it is important to go online simply because everyone else is, and one must keep up with one's competitors (even if the notion of competition is largely academic when the institution in question is in another part of the globe, and its medical practitioners address a specifically other local need).

The other matter to acknowledge was the Department of Health's report of 2000, entitled *The NHS Plan: A Plan for Investment, A Plan for Reform.* The report includes several claims that emphasise the fact that the delivery of health care education should be, in essence, a buyer's market. In other words, learners can insist on a choice of provision. According to the plan:

> The NHS will continue to support, recognise, reward and invest in individuals and organisations, providing opportunities for individual staff to progress in their careers and encouraging education, training and personal development. Professionals and organisations will have opportunities and responsibilities to exercise their judgement within the context of nationally agreed policies and standards. (Department of Health (DoH), 2000, p. 4.)

Or, as the report puts it elsewhere, the ambitions are for an agenda that

> …will benefit all staff by widening access to work based development programmes, delivered online as well as face to face. It will provide tailored support for clinicians and managers with leadership potential at different stages in their careers and for those already in leadership roles. Its target group will include people who run service departments, clinical services and community based networks who want to stay in the front line as well as those who seek to progress into executive roles. (DoH, 2000, 90)

Once we had established the relevance and importance of an online provision for an MSc in Diabetes, however, we were obliged to address a similar question as before. How would we make this work?

Recognition of the Challenges

Up to a point, without lengthy and costly market research strategies, assumptions are not only valuable tools: they are the *only* tools available. And although it is sometimes embarrassing to reflect on one's assumptions at a later date (the recognition of naïveté can sting), there is little point in being disingenuous at this stage either. Some of our assumptions were as follows.

We assumed that students would enrol on the course with a range of existing research and evaluative skills, but on the whole that the students would base their new studies on a common stock of knowledge. After all, our potential learners were General Practitioners and health care professionals who had been through mandatory previous training and had worked in the industry (again, we assumed). However, having learned from the experience of previous years (the delivery of the face-to-face version) and that of the MSc in Public Health made us think again. Between 2005 and 2006, Exploring Research Methodologies (as Research Methods was known at the time) was a taught (and mandatory) unit on the MSc in Public Health, for the simple reason that the students had severely limited knowledge in this area – limited to such an extent that it was insufficient to enable an acceptable grade in the dissertation. This being one of several reasons to include the unit on the MSc Diabetes, we set about writing something that would be suitable for an online environment.

Along with concentrating on what research actually is and why it is done in the first place, the unit explored quantitative and qualitative research, the interpretative approach and mnemonics; it looked at the various differences and complementarities between the experimental methodological approach, experimental controls and standards, and data analysis. It looked at systematic reviews and the Cochrane and Campbell Collaborations; sampling errors, confidence limits and correction factors – very much the tools of the trade.

Knowing that we faced the potential problems common to all online learning developers worldwide – among them being the issue of student engagement, language and task level appropriateness, the issue of suitable formative and summative assessment – we were keen to punctuate the presented material with quizzes, tasks and discussion activities. After several trials to determine the best manner of presentation, we had settled on Articulate as our e-learning authoring tool (it was adaptable and flexible), and it was simple to slot in these quizzes and tasks at strategic points throughout the presentation. The discussion tasks, of course, were a way of promoting student engagement; and although the option of these being synchronous was discussed, it was not a long discussion. We had to go with asynchronous because of the practicalities of people enrolling from other parts of the world. Also, we had to make some more assumptions. We were certain that many of those who enrolled would be health care professionals (in one way or another), who might well be required to juggle not only professional responsibilities but also family responsibilities, especially if the MSc represented a return to study. (The latter was particularly of interest, especially in the light of Leonard's (1994) suggestion that one third of women find a lack of support when they return to education. This was – and surely remains – a serious issue to consider when designing any sort of Higher Education programme.)

Development

As a distance learning course grew out of subsequent discussions, and as I researched and wrote material on the topics of Principles of Diabetes Care, Primary and Community Diabetes Care, and Diabetes and the Older Person, various questions (and doubts) occurred along the way, irrespective of the

large number of online learning courses we had already nursed to full health. For example, the following question beat like distant drums in my mind throughout the process. To what extent is human interaction essential, or will technology and the virtual environment always suffice from this point on? We were aware that Kevern and Webb (2004) had identified that some mature students lack coping strategies and support systems for effectively managing both the workload of a taught course and their domestic role, which added further support for the need to develop and offer a flexible and family-friendly system of studying. Indeed, we were confident that our Virtual Learning Environment (VLE) offers a student access to his/her learning resources at a convenient time, but what about the consideration of suitable technological infrastructures. If the technological infrastructures were not in place (and their being in place is a matter that must never be taken for granted), especially in developing countries, for example, then there would be problems from the beginning. For this reason, we knew that the material would have to be tested and tested again, using every combination of web browsers and media players, the better to iron out compatibility issues as early on as possible.

There were other big questions to address. Not least was the thorny issue of how to avoid what we knew must be avoided, i.e. a learning resource consisting of simple reading exercises, with nothing to enrich the experience. There was also to take on board the fundamental recognition that health education is fraught with ethical, sometimes controversial, frequently complex issues that might benefit from intellectual interaction and face-to-face debate. On the other hand, we had the affirmations of (*inter alia*) Gibbs (2000), who suggests that subjects have been brought alive by distance learners in the way that they use the new technology. Gibbs also posits the thought that even the process of communication between lecturer and student can be improved by distance learning: the teacher takes a more considered time before responding, rather than make a comment that in other contexts might be regarded as cursory. In other words, the lecturer feels that the student should be self-empowered to take charge of his/her own learning at Masters level. Both Boud (2000) and Yorke (2003) have argued that one of the key purposes of Higher Education is to facilitate the autonomy of learners.

"Traditional" modes of learning (Palloff & Pratt, 2001) might not be suitable to prepare students for the autonomy and interdependence needed to engage with a virtual learning environment to their best advantage. Although the world of technology-enhanced learning has developed considerably in the twelve years since this judgement was made, it is worth reflecting on such comments, and of course on what we might learn from them. After all, when discussing the growth of a distance learning programme, we must elaborate on more than the requisite technology as a changing agent: the learners themselves are changing agents, making a move into (possibly) unknown territory. How would we ensure that the learners would be engaged without yearning for human contact? Or could we assume that given the geographical isolation in which our learners might enrol, they would be accustomed to the challenges peculiar to distance learning, or at least ready to adjust to them?

Our assumption that many distance learners would require, in lieu of immediate peer support, considerable support on the part of the lecturer proved correct. (This prediction of "neediness" was one of the reasons why we plan to charge the same fee as if they were face-to-face learners.) Furthermore, the roles and responsibilities that are given to online personal tutors can be onerous. Elsewhere (Mathew, 2012) I submit that the role of the online personal tutor has stretched, so much so that students have different expectations when engaged in cyberspace activities, and a personal tutor is often asked to adopt the additional roles of counsellor from time to time. How do we ensure that boundaries are maintained and that hours for students to approach staff are respected? Furthermore, I submit (Mathew, 2011) that the online tutor can also be the container for a good deal of learner anxiety. Here I refer to anxiety containment in the Bionic sense (Bion, 1961).

For all of the reasons mentioned above, it was important to keep the learning package as technologically simple as possible. Students were told that they would need an Internet connection, but it was not deemed sensible to insist on any more ambitious technological requirements: although in recent years the technological infrastructure worldwide has been augmented in general to support distance learning, it is certainly not the case everywhere. Furthermore, in some parts of the world, the cost of bandwidth is still prohibitive, and cost alone (irrespective of technical possibilities) is a limiting factor, reducing the chances for video streaming, for example. With these thoughts in mind, we embedded Articulate files into our Blackboard learning platform, called BREO (Bedfordshire Resources for Education Online). As long as the learner has an Internet connection and Java installed, the packages load without difficulty.

As mentioned above, regardless of any ambition for a course with synchronous components and an elaborate interface, the realities of our global working environment have imposed certain inevitable compromises. Asynchronous material is developed to meet learners' demands, whatever the time zones are their origins, and whatever access to telecommunications is the case. The important factor is an effective communication infrastructure. After all, the geographical remoteness of a learner might or might not be relevant to his or her progress (it depends on the learner); but when we add in matters such as local economic conditions, or an environment in which the cost of supporting an infrastructure is overwhelming, then it might be that the development of technology is all-but impossible without additional funds. Such matters might be beyond the control (or even prediction) of any programme developer.

Something similar might be said of staffing issues. By now it should come as no revelation that face-to-face teaching and distance teaching are different disciplines, needing different approaches and different skills sets; that while there are key shared outcomes between the two, it by no means follows that a member of staff proficient at one will automatically be proficient at the other. Nor is the efficient training of staff that are proficient in one discipline into exponents of the second discipline a dead certainty. Far from it; in fact, the transference between the two skills sets might not be possible at all; and it is

more than likely that any staff available will (at first) lack adequate professional training in the development and deployment of distance learning. Hence plans were developed to employ a distance-learning specialist who was also an expert in the field of diabetes care. By the time this paper is published the appointment will have been made, hopefully.

Summary and the Future

In short, a distance-learning programme was developed (against an operational and strategic deadline), for the reason that potential learners would benefit from dependable access to quality educational resources, as well as to continuing professional development. Of course, we might argue that the most unpredictable component of any dynamic – including a pedagogic interface – is the human being him- or herself. A piece of technology might well let us down, but in general it will work or it will not work. A human being on a distance-learning course is infinitely more unpredictable. Indeed, the very term "distance learner" can be seen as a gross oversimplification, based on ideals, and we submit elsewhere (Mathew & Sapsed, 2012) that the notion of "tradition" must be challenged as we move further into the online milieu. Human beings will not be predicted; understanding the culture of students – how they have been educated to date, what constitutes their learning preferences – will only get us so far, and no further. It is up to us as educators to maintain a respectful eye on our learners' progress, and one of the advantages of online learning is that the programme can be modified as time goes on, according to learner feedback.

By allocating significant resources in order to design strong, engaging distance learning services to meet both the collective and individual needs of our students, the University of Bedfordshire has grasped the nettle of providing quality education in health care, with the barrier of geographical distance on its way to being overridden once and for all.

References

Bion, W.R. (1961) *Experiences in groups*. East Sussex/New York: Routledge.

Boud, D. (2000) Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education*, *22*(2), 151-167.

Department of Health (DoH). (2000). The NHS Plan: A Plan for Investment, A Plan for Reform, Department of Health. London, UK. HMSO.

Gibbs, W. J. (2000) Distance-learning and opportunities and challenges for libraries. *Electronic Collection Management, 25* (2), 115-135.

Kevern, J., & Webb, C. (2004) Mature women's experiences in pre registration nurse education. *Journal of Advanced Nursing, 45* (3), 297-306.

Leonard, M. (1994). Transforming the household: Mature women students and access to higher education. In S. Davis, C. Lubelska, & J. Quinn, (Eds.), *Chancing the subject: Women in HE*. London, UK: Taylor and Frances.

Mathew, D. (2011, December). The absence of 'E'. *Research in Post-Compulsory Education, 16* (4).

Mathew, D. (2012). The role of the online personal tutor. *ECEL 2012* (26-27) October, Groningen, The Netherlands. CD ISBN: 978-1-908272-74-4 CD

version ISSN: 2048-8637 Book ISBN: 978-1-908272-73-7 Book Version
    ISSN: 2048-8637.
Mathew, D., & Sapsed, S. (2012). Distance learning students: Should we use
    technology or pedagogy to overcome work and life obstacles? *E-Learning
    Papers No. 31*. ISSN: 1887-1542. Retrieved from
    http://elearningeuropa.info/en/article/Distance-Learning-Students%3A-
    Should-we-use-Technology-or-Pedagogy-to-Overcome-Work-and-Life-
    Obstacles%3F?paper=122239
Palloff, R.M., & Pratt, K. (2001) *Lessons from the cyberspace classroom –
    The realities of online teaching*. San Francisco, Ca: Jossey-Bass.
Yorke, M. (2003) Formative assessment in higher education: moves towards
    theory and the enhancement of pedagogic practice. Higher Education, *45,*
    477-501.

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