

The power of technology: The use of online & blended learning for capacity building

Virtual learning environments (VLE) allow students to interact with tutors and each other from across the globe at the push of a button. **Leigh Morris** and the project management team at Royal Botanic Gardens Edinburgh (RBGE), Edinburgh have carefully developed their VLE to deliver botanical and horticultural training and to ensure all of their students have specialised support and great content to engage with.

RBGE's desire for online learning

RBGE has delivered botanical and horticultural education courses around the world for over 100 years. Since 2004 our portfolio of courses has expanded significantly, with the introduction of a new BSc in Horticulture with Plantsmanship and a number of RBGE branded Certificate and Diploma courses. The demand is increasing and to widen participation, as well as improve the quality of delivery for existing students, we decided to set up an RBGE virtual learning environment (VLE). The bold vision was to *'establish RBGE, in partnership with others, as the global leader for the provision of online horticultural and botanical education'*. This received support from our Board who seed funded the project.

Project team & tender process

A cross-RBGE project management team was set up, Chaired by myself, with the first meeting in April 2011. Over the next few months we agreed the ambition, Terms of Reference and, most importantly, we benchmarked against other institutions already delivering education in this way.



A remote learner studying on-line at home via the VLE (RBGE)

Invitations to tender for supply of a VLE were sent out in November 2011. Five software companies responded and prices ranged from less than £10,000 for 'off the shelf software' to over £80,000 for 'a bespoke RBGE tailored software package'. The decision was made to go for the cheapest software ('Moodle'), not because of price per se, but because it is the most widely used software and

therefore most easily adapted and supported. We also wanted to invest as much funding as possible in staff development and content creation. We selected the company Synergy Learning (<http://www.synergy-learning.com/>) to be our software provider and trainer; this was delivered by the excellent Jon Bolton, who had previously worked with the RHS on their VLE.

‘Propagate Learning’

We wanted a name for our VLE and invited the RBGE community to submit suggestions. Dr Ian Edwards proposed ‘Propagate Learning’ and this was unanimously chosen – it links education to plants, suggests growing and multiplying knowledge, and is also a name and brand that others would hopefully want to partner with in the future.

We soon realised the need to develop and support RBGE staff and create a culture of online learning. We also understood that ‘content is key’ and wanted to avoid simply putting existing word documents, pdf files and PowerPoint presentations onto our VLE. We appointed a VLE Coordinator and then invested a great deal of his and other staff time in staff support and development, over the next 16 months. We created interactive quizzes, presentations and short films demonstrating horticultural and botanical techniques. We set up a film studio in one of our lecture rooms, persuaded a number of our experienced horticulturists to perform their skills in front of a camera, then edited them and added voiceovers. We now have short films on 23 different horticultural skills, ranging from propagation to potting-on. It has been an excellent learning curve for us and these films are now being



Propagate Learning Home Page (RBGE)



‘Content is key’. The Head of the School of Horticulture, Phil Lusby, is filmed for the introduction to the RBGE Diploma in Garden History (RBGE)

linked to support learners on a number of our courses and modules. We are now producing a series of botany films for use in the same way.

In early 2013 we officially launched ‘Propagate Learning’ (www.propagatelearning.net). The courses we prioritised to go online were the ones we believed would attract the most students, to enable us to generate the income needed to sustain the Coordinator post and keep creating more dynamic content. We were delighted when recruitment on our initial ‘live’ courses exceeded our expectations.

Blended learning

For me, the most exciting opportunity for online education lies with blended (or hybrid) learning, meaning that learners come together for occasional evenings, days or weekends and then return to their homes to continue studying remotely, supported by the VLE. Alternatively, a tutor visits a group of learners to deliver elements of a course before leaving them to work via the VLE. The clear advantages of blended learning are: that students meet their tutors and peers, form face-to-face bonds and friendships, and most importantly visit a place, engage with plants and get their hands dirty!

RBGE are now successfully applying this blended learning model to a number of our courses: we offer practical horticulture weekends for the students studying remotely for the RHS (Level 2) Certificate in Horticulture; students taking the RBGE Certificate in Practical Horticulture now watch our short lectures and complete exercises online (which means when they come in for the course they go straight into the fun hands-on practical classes);

our RBGE Garden Design and RBGE Garden History Diploma students attend a series of weekends at RBGE throughout the year; and our RBGE Botanical Illustration Diploma is now more easily accessible to students from all over the world since they attend 2-week blocks at RBGE on an annual basis.

Through the offering of blended learning courses, learners from across the UK and the world can now access RBGE i.e. there is a limit to how far people will travel for a one day per week course, but there is seemingly no limit to the distance students will travel for a block course, when supported by an online platform. We believe the key is to plan our courses so that traditional lectures can be delivered remotely so that the days or weeks students spend at RBGE contain lots of hands-on practical sessions, group work, seminars and discussion. In effect, learners ‘do the nice stuff in the nice place!’

Capacity building

For many years RBGE staffs have delivered short training courses to build capacity in a number of international botanic garden development projects. These courses work well and student feedback is always excellent, however, after the courses have ended, RBGE staff return to Scotland and the students have typically had very little subsequent contact with the tutors. Our vision now is to use ‘Propagate Learning’ to support these countries both before and beyond the short courses, so that students can do more preparatory work and then when RBGE staff leave, the students can still engage via the VLE. Access to the internet is critical, but there are now very few places on the planet where this is not possible.

The Future?

I delivered our full vision for the future for 'Propagate Learning' in a presentation at the BGCI Congress in Dunedin in October 2013 (<http://www.youtube.com/watch?v=Khl5vWSC1Hg>). In brief, I believe a VLE is now a fundamental tool to being a credible learning provider in the 21st century. It enhances education and provides an interactive 'classroom' that can be accessed 24 hours a day, 7 days a week, anywhere in the world. A VLE, however, is just one part of the whole online package needed to support remote learners, which should also include: email, social media (in its many forms), and technology that enables face-to-face interactions through webcams, such as Skype, webinars, pod casts or augmented reality. This can be highly successful, but you must create a culture of online learning within your team and, whenever possible, add in some element of blended learning for the students.

Will online learning ever replace offline courses completely? I don't believe so, as there will never be any substitute for learning in a wonderful place, taught by enthusiastic, skilled and knowledgeable tutors, using living plants. For a great many people, however, with busy lives, or who don't live close enough, or have the finances to attend regularly, the use of such online technology will undoubtedly become even more important in the next few years, and if we get this right the potential to enhance capacity building through online learning is amazing.

RÉSUMÉ

Le Jardin botanique royal d'Édimbourg (RBGE) possède une longue histoire dans l'enseignement de la botanique et de l'horticulture à Édimbourg et, au travers de projets, de par le monde. Depuis quelques années, l'éventail des cours a considérablement augmenté. Pour accroître la participation et améliorer le soutien aux étudiants actuels, un environnement d'apprentissage virtuel (VLE) en ligne a été développé en 2003. Le RBGE offre maintenant une partie de ses cours « à distance » ou « en apprentissage mixte », dans le but de mettre tous les programmes en ligne dans un futur proche. Bien que l'utilisation d'un VLE pour « enseigner sur les plantes » comporte des difficultés, il y a des



Students at the 2013 RBGE horticulture training course at Kunming Botanic Garden. In the future 'Propagate Learning' will support the students long after RBGE have returned to Edinburgh (RBGE)

opportunités et des avantages conséquents quant à l'adoption de telles technologies pour mieux atteindre et aider les apprenants. Il est estimé que les clés pour réussir consistent en l'établissement d'une vraie « culture du VLE » et en la création de « contenus remarquables » pour que les apprenants les utilisent. Cet article examine les progrès actuels du RBGE et ses ambitions pour le futur.

RESUMEN

El Jardín Botánico de Edimburgo (RBGE) tiene una larga tradición en la enseñanza de la botánica y horticultura en Edimburgo y de la enseñanza a través de proyectos a nivel mundial. Recientemente el abanico de cursos se ha incrementado mucho. En 2003 se desarrolló un sistema de aprendizaje virtual a distancia (VLE) para mejorar la atención a los estudiantes y aumentar su participación. RBGE ofrece ahora alguno de sus cursos como educación a distancia o semipresencial,

con el propósito de que todos sus programas se desarrollen a distancia en un futuro próximo. Aunque el uso de VLE para la enseñanza de la botánica tiene sus retos, adoptar una tecnología así proporciona enormes ventajas y oportunidades a la hora de captar y tutorizar a los estudiantes. Las claves del éxito parecen encontrarse en establecer una verdadera cultura de VLE y crear buenos contenidos que la hagan atractiva. Este artículo revisa los logros alcanzados y los proyectos de futuro del RBGE.

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The VLE would enable students such as these on the RBGE Certificate in Practical Horticulture, delivered in Lao, PDR, to continue their contact with RBGE after staff have returned home (RBGE)