

The Birth of a Global STEM Network?

DELEGATES from four continents have attended the first International Perspectives on the Development of Distance Learning Colloquium at The Open University, Milton Keynes. The event, held 18 - 21 April, was hosted by eSTEEeM, the joint Science and Mathematics, Computing and Technology (MCT) Faculties Initiative, with Open University Worldwide to foster international collaboration in e-learning.

Professor Steve Swithenby, eSTEEeM Director (Science), said it was the result of 'a happy accident'. "I had been in Nigeria and agreed some senior people from universities I collaborate with would visit," he said.



Professor Nick Braithwaite (left) shows delegates around the science laboratories. Picture: Steve Larnar.

Professor Peter Taylor, Faculty of Science, had coincidentally arranged visitors from Central Asia.

The word then went out via colleagues to other overseas partners, Professor Swithenby said. "We anticipated 25 people coming and had almost 50, which in six weeks from a standing start was pretty good."

To read more of Steve Larnar's reports from the International Colloquium turn to pages 10 - 16.

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Practically challenging

FORTY years ago home experiment kits delivered through the parcel post and one-week, intensive, residential schools seemed like the main options for practical classes. Both components were embedded in many of the major distance-teaching courses.

In the 1990s, the advent of personal computers and the creation of the internet began to suggest new opportunities for practical working at a distance and many people explored the emerging potential for a fresh approach. Nevertheless, in practice, week-long residential schools survived while home kits were simplified or phased out and computer-based simulations appeared. Meanwhile, our residential schools were divorced from the primary distance-teaching units: it was time to reconsider.

From February 2012, things will certainly be different in Science at the OU. The level 2 practical science programme of discipline-based residential schools will be replaced by a suite of inter-related modules [1] that will enable practical work to be truly part of collaborative distance-learning.

So what has driven this major change? Inevitably the technological advances that have taken us from video tape, via CDs and DVDs, to broadband video-streaming are a key factor. Interactive access to instruments and data is as much a part of everyday life for a scientist as shopping.



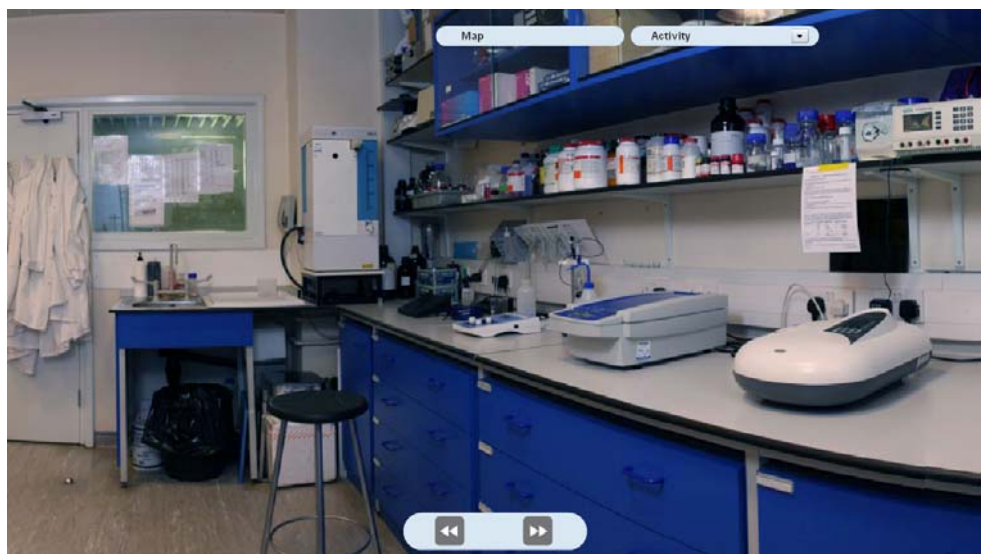
A Science Laboratory at residential school. Picture: Andy Pini.

There are however other influences that have forced a change. One of these concerns the issue of whether or not a seven-day intensive programme is the best way to develop practical skills. Another is whether the traditional approach to practical laboratory classes is the best way to prepare people for practical enquiries in the 21st century.

This is why the new level 2 practical science modules will extend the learning window over a period of nine months and will provide learning opportunities for students in subject groups and in interdisciplinary teams (mixing chemists, physicists, biologists and geologists).

Practical science that can be wholly conducted at a distance is well aligned with our being inclusive in our mission and global in our vision. Of course there are clear limitations and compromises that have to be accommodated. Whereas, the skills of close observation and measurement can be practised and discussed using current software and communication platforms, inevitably certain tools that relate to particular human sensory interactions are still beyond routine reach.

It is easy to control a laboratory instrument through a computer-keyboard, mouse or touch-screen and it barely matters whether this instrument is on the bench in front of you or in another country – in fact, these days, I control most of my laboratory apparatus through a keyboard. By contrast, observations that are based on the feeling of surface texture or that require manual assembly, mixing or segregation



View 1: screen shot of the 288 virtual Physiology lab portal viewable by students on level 2 practical science residential school.



View 2: screen shot of the 288 virtual Physiology lab portal viewable by students on level 2 practical science residential school.

really do benefit from the investigator being in the same place as the things being investigated.

So in teaching practical science, what can we do, what can't we do and how can we get the optimal solution to the practical challenge? Well, in our curriculum today we already use a remotely controlled telescope, we already combine film and data to furnish interactive action-replays of experiments, we already have biological and petrological versions of a digital microscope with huge archives of slides and we already use a variety of visualizations of landscapes and artefacts.

In fact we can immerse real students in some virtual environments of sight and sound that are practically better than the real thing. The "can't do" list includes aspirations like being able to touch, feel and manipulate complex objects in the virtual world – these are do-able but are not currently affordable; it also includes sensory perceptions like smell and like 'wind-blown-rain on the side of your face' – these are integral to chemistry labs and field work respectively; and working with living tissue is similarly part of the full biology experience.

For the time being we will have to accommodate these things in our new level 2 practical modules by maintaining options for being present at a specific place and time.

However, the core of essential know-how in science is changing, not least because of what the internet has enabled – for instance the library's resources are with us at any time and in any place.

Indeed the challenges of developing the skills of a practical scientist 'at distance' are different now from what we faced forty years ago – and the good news is that the goal is moving ever closer to what we can achieve.

[1] Level 2 Practical Science modules are closely linked under the generic banner S288 but will be presented via five course codes SX(C/E/G/L/P)288.

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There's an app for that!

INITIALLY my COLMSCT project developed and used a mobile phone application, now more properly referred to as an app, called the *Subnet Exerciser*. This app, shown in figure 1, gave students on the Cisco Networking modules T228/T216 the opportunity to practise subnetting, something many students find tricky. The app was downloaded, installed and operated in much the same way as any mobile game of the time would have been run. The Java programming language, which was supported by the relatively basic phones available in 2007 when the project started, was used for development. Several cohorts of students were given the opportunity to try the *Subnet Exerciser* and their response to it and mobile learning in general was encouraging. A formal survey conducted towards the end of the project confirmed that benefits to students are to be gained from the exploitation of mobile technologies in teaching, learning and support.

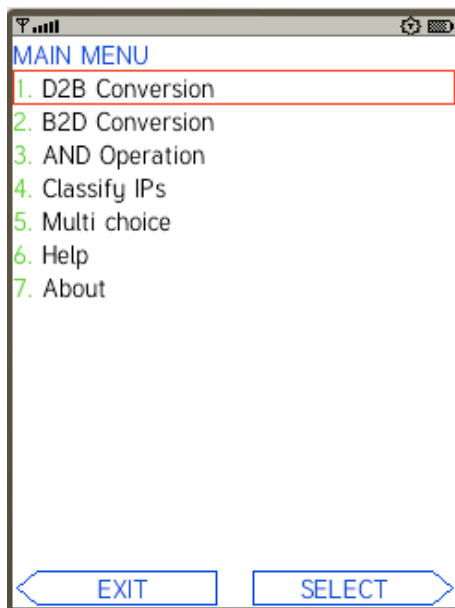


Figure 1 Main menu of the Subnet Exerciser.

However, from the outset many students who owned smartphones were barred due to the non-compatibility of this Java-based app on their particular type of phone. Whilst a PC based work-around was available to them this was far from satisfactory.

My project came at a time of rapid advancement within the mobile world. The mobile phone was gaining many features similar to those found on Personal Digital Assistants (PDAs) of the time which in turn

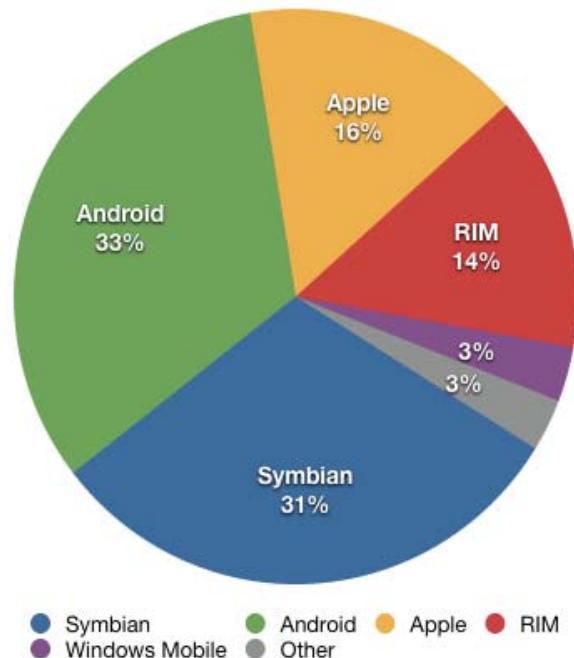


Figure 2 Market share of mobile platforms at the end of 2010.

were acquiring greater connectivity. However, the smartphone lacks coherence, with each manufacturer choosing a different platform. Currently there are five main platforms; *Apple's IOS*, *Blackberry's RIM*, *Google's Android*, *Nokia's Symbian* and recently *Microsoft's Window Phone 7*. Figure 2 shows market share of these platforms as of the end 2010. [1]

These platforms all offer similar basic features but at the same time lock users in when it comes to using apps. This also extends to developers as well, each platform needing specialist knowledge, making the ubiquitous app problematic in the extreme. As can be seen any single platform has less than a third of the market, so would only reach a third of the student cohort.

However, one area of similarity to these platforms is their support of basic web browsing. As long as the app meets the lowest common denominator of cross-platform browser facilities, and I'm mindful in saying this as for example Apple's IOS does not support Adobe's Flash player, it will work across all platforms. For many years the OU stuck with Windows PC-based applications even when, in the case of say Design and Music, other platforms were and are still more commonly used. Whilst this approach has

been relaxed somewhat it cannot be taken in regard to mobile apps. A universal approach must be adopted. I believe this is the way forward for the OU to adopt in developing new learning opportunities.

My experience with mobile apps demonstrates that OU students use the widest possible variety of mobile phones and that these are very personal objects to them, so there would be a great reluctance to change. To be successful in providing mobile learning opportunities to students we must provide a service that runs on all phones, not just the one we may have in our pocket at the time.

[1] <http://www.canalys.com/pr/2011/r2011013.html> accessed 20/04/11

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Education for employment



Dr Keith Williams. Picture: Becky Thornton.

OUR eSTEE M Manifesto highlights *Education for Employment* as an area in which we will foster internal and external conversations with the intention of building joint awareness and enhancing the OU STEM presence. We are currently planning our first event in this important area.

We plan to focus on understanding the complex learning environment in which many of our students operate. At the OU we frequently cite the fact that over 70% of our students are in employment and that many of these are studying for employment based reasons and some may enjoy employ sponsorship.

In the *post Browne* world there will be greater emphasis on information and support relating to employability further emphasising the need for integration between HE institution based and employer based learning.

For a typical OU student their learning journey with the University from initial enrolment to graduation will typically take 5 or 6 years. In their employment they may have a several changes of role, very likely a change of employer all accompanied by a range of training and staff development courses. How do students maximise their learning from the resources available to them from OU courses, their employer's intranet systems, Openlearn and their professional body?

The Towards Maturity organisation conducts benchmarking activities on the uses of e-learning in the business world (www.towardsmaturity.org/) and we are working with them in the design of our event.

We plan to get speakers who will present the uses of social networking, rapid and collaborative course development in the business sector and to share with them OU developments in e-learning. In workshops we will build on the blue skies thinking of the MCT Faculty's Infinite Bandwidth Zero Latency (IBZL) project (<http://en.wikipedia.org/wiki/IBZL>) that has been exploring the "where next" of the networked world and imagine the learning world that work-based learners might be offered in the near future.

For further information on the event please contact Keith Williams, Director eSTEE M (MCT).

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Infinite Bandwidth, Zero Latency

IBZL is a thought experiment. It starts from the question: what if bandwidth (and latency – the delays in transmitting a piece of information) in communication networks like the internet didn't matter any more? What would become possible? The capacity and speed of the internet and related networks has increased massively over the last 20 years enabling a swathe of applications, starting with electronic mail and chat.

First generation broadband technology gave millions of users an 'always-on' connection to the net for the first time. This led to unanticipated applications like Wikipedia and YouTube. What might we be able to do with such networks? More specifically, what opportunities might be opened up for educators and learners? There has been a strong policy push in many countries for 'Next Generation' (NG) communications networks, though rather less policy thought appears to have been given to potentially new applications they might enable.

IBZL is a collaboration between colleagues in the Faculty of Mathematics, Computing and Technology, Manchester Digital (a trade association of digital companies in Manchester and the North West) and the University Centre Milton Keynes as a way of exploring this potential, and building research and development links with industry and academic partners. Manchester has a long tradition of supporting its digital industries and is currently implementing a 'next generation' broadband network through the academic heart of the city.

In its first phase we held three workshops in Manchester at which a range of participants explored this problem space with the aim of identifying potential areas for research and development, using the Imagine/Triple Task approach developed by Simon Bell from the Communication and Systems Department at The Open University .

To date, this has led to proposals for two feasibility studies to the Technology Strategy Board, one of which was successful. Watch out for a report on the feasibility of 'real avatars' or robots in the agricultural and tourism industries in the North Pennines in a future eSTEEeM newsletter! Plans for a more reflective 'think tank' to consider some of the wider social and policy issues associated with IBZL ideas are well underway.



IBZL Workshop May 2011. Picture: Steve Walker.

As part of the eSTEEeM project, we are now applying these methods specifically to exploring the potential in education, through a series of three workshops in May and June. We will be also be reporting on these in a later newsletter.

We have reported on our initial work in Bell & Walker (Futurescaping Infinite Bandwidth, Zero Latency. *Futures*. Vol. 43, pp. 525 – 539.) and in a forthcoming conference paper at the IADIS Human Beings and Technology conference in Rome in July. There is also a Wikipedia page at: <http://en.wikipedia.org/wiki/IBZL>

If you'd like to know more about IBZL, please contact Steve Walker, Simon Bell or Clem Herman.

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MAD about astronomy

THE project on **M**obile-device enabled **A**stronomy **D**iscussions (**MAD**) will integrate the data stream from The Open University's remotely-operable astronomical observatory in Mallorca (PIRATE, see <http://pirate.open.ac.uk>) into an appealing mobile device application and use it to drive scientific discussions among students with an interest in astronomy.

The project taps into the rapidly growing market share of smartphones and their use by today's generation of learners. Internet access from mobile devices is growing fast and before long will become part of everyday life for everyone. Mobile internet use is the ideal vehicle for part-time distance learners who wish to optimise the use of their spare time anywhere and at any time.

MAD will create a level 1 online astronomy community that uses mobile devices to follow, comment on and influence astronomical observations on the OU's PIRATE facility and sister observatories. The activity engages students on the go, in that spare minute, with live, exciting content. Thought-provoking seed postings by tutors will trigger twitter-style exchanges, and a portfolio of contributions forms an end-of-module assessment.



The OU's remotely-operable PIRATE telescope in its robotic dome in Mallorca.

The Open University is already implementing mobile-device friendly front-ends for all its modules, but as yet there are only few examples of OU modules or

activities with bespoke mobile applications that aim to exploit the true potential of a smartphone.

The MAD project recently recruited Dr Alasdair Allen as a consultant. Alasdair is a senior research fellow at the University of Exeter's astrophysics group where he is writing software tools for the control of robotic telescopes, but he also runs a company that develops iPhone applications.



iPhone applications by Alasdair Allen, similar to those being developed for MAD.

Alasdair recently achieved international prominence as the co-author of an application that exposed the detailed location history stored on Apple's iPhones and iPads, triggering a widely-reported international outcry about privacy rights of iPhone users (see e.g. the BBC News article <http://www.bbc.co.uk/news/technology-13145562>).

Although the MAD is addressed at astronomy enthusiasts in the first instance – with the hope of having a first application available in the summer – we envisage that the project will provide a generic template for a dedicated distance-learning activity built around live events that are being followed, commented on and influenced by an on-line community, in whatever field of study.

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Peer assessment in distance teaching

At present peer assessment and review are not used extensively within The Open University, despite widespread use across the sector. Through our project we aim to develop institutional knowledge of;

- the advantages and disadvantages of peer assessment and review;
- how it can be applied to distance learning
- automated systems for delivery

As well as reviewing the literature in this area we are going to carry out a series of pilot studies on a number of courses across the University, but mainly in the Science Faculty and the Faculty of Mathematics, Computing and Technology, on the use and advantages of peer assessment/review in distance learning.

Based on an evaluation undertaken by the project team we will then identify the key compo-

nents of an automated system for peer assessment/review.

Most such system developments within The Open University appear as a result of individual course needs. This means that solutions are not always universally applicable. We wish to provide a University wide solution that is flexible for use over a range of courses.

We could start by focussing on peer review and the feedback/learning it provides.

We recently circulated a call for interest in the peer assessment project and had a good response from central academics and associate lecturers alike. A meeting of a launch interest group has discussed the way forward.

It is clear that there are more examples of the use of peer review in OU modules across the University than we first thought.

We were pleased to see the different ways that Module teams are using the present systems to carry out peer review. I feel encouraged that a more flexible system would not only help these module teams to carry out their present peer review activities more effectively but would also provide a catalyst for more module teams to embrace peer review/assessment.

We are at present carrying out a more comprehensive analysis of the use of peer assessment across The Open University, together with an external review of how peer assessment is used at other institutions.

Finally we are carrying out a literature review on the use of peer review/assessment in distance and online learning.

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Picture: Richard Learoyd

Career Development for STEM professionals

IT is a familiar story everywhere, even at the OU where we like to think equality issues are at the core of our mission. Women are under represented in STEM education and employment, especially the higher you go up the hierarchy.

Some things have changed in the past 20 to 30 years, with less overt discrimination and more acceptance of women's roles within these fields. However science and technology work place cultures are often still modelled on the male breadwinner as the 'ideal worker' with long hours, lack of part time work options and other cultural factors which limit women's promotion and progression.



One group of women in particular continue to have difficulties with getting on in STEM, i.e. those who have taken time out of careers for one reason or another (often but not always to focus on family care). Barriers to returning include loss of confidence, out of date skills, lack of contacts and networks, as well as attitudes of employers.

The T161 *Return to Science Engineering and Technology* module and its predecessor T160 *Science, engineering and technology: a course for women*

returners were developed to address this issue. We already have feedback from many of the participants about the positive changes that the module brought to their careers and lives, for example as one student commented "Science is my first love. It's what makes my heart sing. But I know how long it is since I've really been in the field, so I need to be realistic about how I can earn my living. But now I have options available - as a result of the contacts I made through the module."

The STEM returners project is planning to carry out an in depth evaluation of the outcomes and impact of the T160 and T161 courses, which will involve collecting interview, survey and focus group data. In addition we are planning an animated resource for iTunes U that highlights the key messages from the module. We anticipate that the lessons learnt from women returners and what works for them will also be of significance to STEM learners more generally and in the second phase of the project we will use our findings to develop a model that will address employability and CPD issues across the STEM curriculum.

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Continued from page 1

The largest contingent was from Nigeria with colleagues from Ghana, China, Kazakhstan, Uzbekistan, India and Austria. Professor Itana Gimenes, currently Visiting Professor to The Open University's Mathematics, Computing and Technology Faculty, represented Brazil.

Each country presented on distance learning and the event was also an opportunity to showcase developments within the OU and its role in a global ODLE market. Delegates toured science laboratories, the Digilab and visited the OU Regional Centre in London.

But the main purpose, said Prof. Swithenby, was to spark a conversation between colleagues from other countries. In his welcome address Acting Pro-Vice Chancellor Research and Enterprise, Professor Alan Bassindale commented: "We want to work with colleagues from all over the world to get better ideas, share our expertise, but also to share your ideas about what is effective learning."

Workshops on Quality Assurance, Assessment and Open Educational Resource generated lively debate and the colloquium ended with a Joint Actions workshop.

Proposals from it included collaboration in West Africa for the free exchange of knowledge, promotion of best practice in Distance Learning and creation of a Distance Learning Scholarship Network.

And delegates were unanimous in wanting the conversation which began in Milton Keynes to continue into the future.

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Face to Face – or Hands-Off?



Professor Itana Gimenes from Brazil, and Mr Mohammed Galdi from Nigeria, work together at the Joint Actions Workshop. Picture Steve Lerner.

BRAZILIAN delegate Professor Itana Gimenes raised smiles among fellow delegates when she said her countrymen and women were happy people: "We like to kiss when we meet". She went on: "Brazilians like to work in a group. We like to talk to people. I would be very sad to work in isolation."

Her point was a serious one, how to keep students engaged and supported within a distance learning model without traditional face to face (FtF) contact - and it was a recurring theme with delegates.

China's SJTU employs sophisticated technology to integrate students within its Network Education programme while The Open University (UK) offers support through its Student Services department and social media.

TERI University in India insists students attend week-long study groups and both TERI's Prof. Vallentyne Kishore and Dr Ben Mensah of the University of Cape Coast, Ghana, voiced concern about distance learning's ability to provide meaningful hands-on practical work in science courses.

Prof. Steve Swithenby agreed it is 'an enormously important area'. "And I don't think there is a simple answer," he said. "There is a vast variety of student. Every country has those who are happy to just sit in front of a screen and those who require practical and emotional support.

"Their support needs are very different," he said. Prof. Swithenby suggested flexible technological solutions like social media, adapted to the cultural and societal requirements of a particular country could be a solution.

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Spotlight: Chinese Perspective

STUDY via iPhone on the underground and an all-seeing eye which wakes sleeping students were just some of the 'showstoppers' from Chinese delegate Dr Chen Zeyu of Shanghai Jiao Tong University (SJTU).

China's Network Education evolved from Distance Learning in the 1950s with correspondence courses and in the 80s via radio and TV, "Just like the BBC and OU in the 1970s," said Dr Zeyu.

In the 90s China embraced internet-based distance learning via web, streaming video and mobile. In 1994 the China Education and Research Network (CERNET) was initiated and five years later a pilot for Network Education began.

Since 1999 Network Education has enrolled 10 million students - 4.8 million in 2010!

In 2000 SJTU, with China Telecom support, started its Network Education College which now offers Blended Learning, Mobile Learning, Mobile Teaching and Moodle-based Interactive Learning.

SJTU-LOCW, or Live Open Courseware, involves content beamed from a digital classroom with Smart Board and E-Pen, monitor screens for lecture notes and student feedback. Cameras track the teacher and support the so-called Student Attention System.

This 'Standard Natural Classroom' is fully interactive, with students watching in classrooms across the country or at home via IPTV.

Mobile Learning, introduced in 2005, now delivers 1.5GB courseware each day via smart phone or tablet with video, live broadcasting and VOD.

Since 2009 Dr Zeyu said, Mobile Teaching means teachers can broadcast lectures live from their home, office or on the move without need of a 'real' classroom.

And in Shanghai, Mobile Learning or Teaching



Dr Cheng Gang and Mark Endean. Picture: Becky Thornton.

can continue via smart phone on underground trains - "Not like in London," joked Dr Zeyu.

After his presentation Dr Zeyu explained how the Student Attention System worked. A camera can detect a student dozing in their seat - or a drooping eyelid. The teacher is alerted to them but the system can incorporate a chair shaker.

The system works only in-class – for now.

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Technology for Technology's sake?



Sam Dick (left) with delegates in the Digilab. Picture: Becky Thornton.

DELEGATES were shown around the Digilab where OU staff can see and are encouraged to use the latest e-learning tools including smart phones, iPads, ebooks, and tablets.

"They can get comfortable with the technology here," Sam Dick, Communications and Promotions Officer for Library Services, told delegates. But the visit, a bit like being let loose in a sweetshop, also threw up interesting areas of debate about technology.

Delegates were given a virtual tour of the OU's two islands in the virtual world Second Life where students and tutors can 'socialise' – it even has its own virtual pub.

They were impressed but some said it was not right for them – yet. "At the moment it is a toy," said one. "We have challenges even with electricity supply in some areas," said another.

Professor Ruzumboy Eschanov of Urgench State University, Uzbekistan, has problems with too much internet! 10,000 people in Urgench have free internet access and not all of it is used for education! He said: "Better technology makes for better learning but people must be taught how to use it properly."

Professor Olufunke Lawal, of the University of La-

gos, Nigeria, is also convinced internet training is vital. "The internet is as important as pen and paper and should be freely available."

Prof. Lawal said she is also fighting attitudes. "Some say the internet is a fad and expensive to maintain. Some teachers believe education should still be 'talk and chalk'," she said.

Prof. Lawal said she would like to have a Digilab in Lagos. "It would open people's eyes!"

Written by Steve Larner, Consultant Journalist, PressReleasePR.

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Spotlight: Indian perspective



Professor Vallantyne Kishore with Dr Keith Williams. Picture: Becky Thornton.

THE huge demand from India's renewable energy industry for qualified professionals is being served by its universities, but in measures akin to 'candlepower' rather than 'megawatts' according to Dr Vallantyne Kishore, Professor and Head of the Department of Energy and Environment at The Energy and Resources Institute (TERI) University in New Delhi.

Some of that demand is supplied by TERI University's Distance Learning Programmes in Renewable Energy but like the industry it serves, the potential for distance learning (DL) is enormous.

Prof. Kishore told delegates distance learning nationally is well-established in India through the Indira Gandhi National Open University. Several institutions had also launched their own distance learning programmes approved by the Distance Education Council.

Prof. Kishore said TERI University's programmes were developed with support from The Open University and OU collaborator, Professor Godfrey Boyle. Currently 64 students are on one-year PG Diploma and two-year Advanced PG Diploma courses.

Programmes are delivered as PDF files, Excel sheets, Word and video files via Moodle and interaction is through online discussion and chat sessions, email and phone.

Face to face contact is mandatory with study weeks in Delhi, Bangalore and Pune for lectures, hands-on experiments and on-site visits. Prof. Kishore said: "Students like to see their lecturer and talk to them."

Courses are aimed at working professionals or graduates to meet the needs of India's renewable and sustainable energy industry which is undergoing massive, near exponential, expansion and investment.

It requires 30 - 40,000 professionals annually. Prof. Kishore said: "Currently we produce about 3 - 400 people a year. There is a very, very large need to produce professionals for the renewable energy industry."

Prof. Kishore said TERI University is keen to collaborate with African countries, establishing Distance Learning Centres and Study Centres on the continent and several delegates requested meetings with him.

Written by Steve Larner, Consultant Journalist, PressReleasePR.

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Spotlight: Brazilian Perspective

DISTANCE Learning is producing qualified teachers as Brazil drives forward its public education system Professor Itana Gimenes told delegates.

Prof. Gimenes, of the State University of Maringa, said the need for teachers could not be met by conventional or presentational learning universities alone.

Between 2000 and 2009 the number of public universities, State and Federal, rose from 176 to 245. Private universities increased from 1,004 to 2,069.

Prof. Gimenes said the current government realised it had to invest more in public education at basic level with more qualified teachers.

Illustrating the demand for qualifications in Brazil, Prof. Gimenes said several universities this year had 20,000 candidates for 1,192 Professional Master Mathematics

courses.

Distance learning is growing in line with the public and private university sectors. 14.1 per cent of the almost 6 million registered students received distance education in 2009, from just 0.2 per cent in 2001 she said.

Brazil's Open University of Brazil (UAB) is not a physical institution but develops distance education courses delivered at Federal and State universities with priority given to teachers in basic education, State and Public workers.

It has regional centres and courses are mainly undergraduate and postgraduate. It does not have research programmes - something which should be addressed suggested Prof. Gimenes.

There is also a government scheme giving universities money to provide courses taught in the evenings, allowing working people to gain



Professor Itana Gimenes . Picture: Becky Thornton.

qualifications.

Prof. Gimenes, currently Visiting Professor at MCT at the OU, said she had been impressed by the importance it gave Quality Assurance.

It is something, she said, that needs to be adopted in Brazil, "to show that distance learning can do the same as presentational courses."

There was still a lot to do to correct the bias against distance learning she said.

Written by Steve Larner, Consultant Journalist, PressReleasePR.

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Left to right, Dr Suleiman Ramon-Yusuf, Dr Basiro Davey, Professor Steve Swithenby and Professor Itana Gimenes. Picture: Becky Thornton.

The talking is over – let the conversation begin!



Professor Steve Swithenby. Picture: Becky Thornton.

IT'S a good start declared Professor Steve Swithenby - as the Colloquium drew to a close.

Prof. Swithenby had hoped the event would see The Open University begin a conversation between Distance Learning practitioners from around the world and that happened.

"We recognised this would be an introductory conversation with delegates coming from very different contexts.

"The only thing they had in common was they are partners of The Open University," he said.

Delegates had seen presentations widely different in scale, technology and approach. Could everyone find something to take home?

"You can look at China with its 10 million students and think, how can we do that?"

"There is a real contrast between command economies where government takes a major role and others where more autonomy is given to individual institutions.

"And those run in autonomous institutions often struggle to build the scale necessary for successful distance learning," Prof. Swithenby said.

"During a presentation about one small programme, I saw close interest around the room. People saying, hang on, that's something we could do, that's something we could pick up and run with."

"I think the colloquium has been a very good start but the challenge is to keep the momentum going. Can we find good follow-up activities, can we share programmes, can we work together to help us all become more competent distance learning teachers?" he said.

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Left to right, Dr Suleiman Ramon-Yusuf, Mark Endean and Dominic Newbould start the conversations early! Picture: Becky Thornton.

Spotlight: Nigerian perspective



Dr Suleiman Ramon-Yusuf.
Picture: Becky Thornton.

OPEN and Distance Learning (ODL) can close the gap between the demand for university places and Nigeria's ability to provide them Dr Suleiman Ramon-Yusuf told delegates.

Dr Suleiman, Head of ODL Division of the National Universities Commission,

Abuja, described limited university access as a very serious problem and nothing short of a paradigm shift could ease it.

Nigeria has seen a massive expansion in university provision through State, Federal and particularly private institutions.

Annually more than 1 million Nigerians sit the Unified Tertiary Matriculation Exam but 117 universities can only enrol 225,000 entrants. There is also a 'brain drain' of academics.

"We have no choice but think of a different way of providing access," Dr Suleiman said.

Distance learning is not new in Nigeria with many professionals qualified via UK institutions. The Open University-led Teacher Education in Sub-Saharan Africa (TESSA) programme is prominent in teacher training. But ODL faces challenges with inadequate courseware, weak learner support systems, inappropriate delivery mechanisms, gaps in regulatory capacity and shortage of competent teachers, tutors and Quality Assurance staff.

Nigerian universities were expressing an interest in ODL – even if it means converting some academics' thinking from what Dr Suleiman

called 'analogue to digital'.

Nigeria is moving ahead, with a Train-the-Trainers Initiative supported by the OU, and ODL course modules and support systems are being designed.

The ODL Division is engaged at Vice-Chancellor level with collaboration between the Nigerian Universities Commission, British Council Nigeria and The Open University.

Dr Suleiman sent an SOS to all delegates, to help Nigeria build ODL capacity and said he would borrow good ideas from all countries represented here. "Collaboration is the key", he said.

Nigeria aims to bring the standard of ODL to the level of global best practice he said, adding: "The future for ODL in Nigeria is bright."



Delegates from the University of Maiduguri, Nigeria arrive for the colloquium. Picture: Becky Thornton.

Written by Steve Lerner, Consultant Journalist, PressReleasePR.

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eSTEEeM Projects announced

eSTEEeM was officially launched in December 2010 with the circulation of its manifesto and the first call for project plans. In February we received 35 project plans from across Mathematics, Computing and Technology and Science Faculties and we are pleased to announce the first cohort of 16 projects have been formally endorsed by eSTEEeM Directors Steve Swithenby and Keith Williams.



Poster presentation session at the eSTEEeM Induction, 3rd March 2011. Picture: Diane Ford.

These projects include projects on assessment and targeted support, teaching laboratory practice and practical skills online, use of mobile devices for learning and support, and understanding the perspectives of international education. The project descriptions and posters describing them are listed on the eSTEEeM website under the section *eSTEEeM Projects*. We are due to finalise five more projects and to put out a further call for projects by the end of May. We envisage having at least 25 projects up and

running by the summer.

The response from Faculty colleagues to be part of eSTEEeM has been incredibly encouraging and we look forward to seeing the projects develop over the next few months. The first eSTEEeM Conference to provide University colleagues with an opportunity to engage more fully with eSTEEeM project developments and outcomes is planned for early 2012.



Visit the eSTEEeM website www.open.ac.uk/esteem for further news.



**Effective study skills support for the Facebook generation:
*The Science Learning Companion***

James Smith, Kate Bradshaw, Mike Gillman, Brian Richardson, Jeff Thomas

This project seeks to bring a contemporary feel to the area of *Science* study skills support.

For example, the highly successful '*The Sciences Good Study Guide*' continues to be the recommended text for students embarking on their studies of *Science* at the OU. However, this *hard copy* book had its genesis in the 1990s and, as a result, often cannot recognise and address differences in the context and demands of modern day modes of study.

Exploring the 'App' and 'eBook' economy



We envisage the production of an ebook that can be distributed via new media channels and associated technologies (e.g. iPod, iPad, Kindle, mobile devices), but also has a 'print on demand' option to satisfy more traditional studying techniques.

Our blended approach to delivery will provide an opportunity to develop new income streams – i.e. through the direct marketing of supporting 'Apps', the eBook itself and other supporting material through a dedicated 'web portal' or other online vendors.


Web portal

An integral part of the project will be the construction of a supporting 'web portal' which will host interactive material to enhance and extend the scope of the ebook and perhaps provide a sense of community for those involved in the learning and teaching of science.

The web portal will provide some innovative support material that can increase the reach and marketability of the ebook, ensuring its relevance in the widest range of pedagogic and learning contexts. We envisage delivery of a wide range of materials, such as: 'Apps'; audio and video podcasts; interactive worked examples and short films.

eSTEEeM
Open to challenges
Exploring the frontiers of STEM education



eSTEEeM

eSTEEeM project poster by James Smith, Faculty of Science. Further posters can be found on the eSTEEeM website under *eSTEEeM Projects*.

Workshop Report: Gender and STEM Research Seminar, 15th March 2011



The editorial team for the [International Journal of Gender and Science and Technology](#), invited two external speakers who are members of the journal's editorial board to contribute to a seminar at the OU. One of the speakers, Dorothy Gordon, Director General of Ghana's Advanced Information Technology Institute, made her presentation live from her office in Ghana and was able to respond to questions from those in the seminar room at the OU as well as to questioners watching her over the web from elsewhere in the world. The second speaker (who was present in person at the seminar) was Professor Maureen McNeil, Professor of Women's Studies and Cultural Studies at Lancaster University.

Dorothy Gordon spoke about the ways that mobile communications technologies can help girls and women in Africa, for use as an educational tool as well as for business transactions by those living in rural villages. As bandwidth is increasing and women have access to mobile phones they are now able to access the internet in ways that were not possible before, but progress is still hampered by lack of reliable data on use and access to ICT in Ghana and lack of universal access across the country to mobile phone signals. Although technological solutions exist, political decisions and under-funding restrict who has access to the technologies that can change lives for girls and women in Ghana. But if it was possible to supply a mobile device such as a laptop or Kindle to every child in school, it would make a huge difference as this would also enable access and cascading

of skills to other family members.

Maureen McNeil spoke about her work on the gendering of biographies of scientists, focusing on the biographies of Barbara McClintock and Rosalind Franklin and the ways in which versions of the extraordinary lives of these two scientists have been created and circulated. She contrasted these accounts with the James Watson's own account of the discovery of DNA in 'The Double Helix', and his version of Rosalind Franklin's contribution to this. Watson's view of Franklin is based on her appearance and her supposed links with feminism. Common themes that emerged from Professor McNeil's analysis of the biographies were the authors' noting of a continuing focus on the appearance of the two women scientists, an emphasis on modesty, almost a requirement to display femininity and unease with feminism.

The seminar was very well attended both in person and virtually, drawing interest from the STEM community and beyond. There was a lively discussion after each talk with questions from those in the room and also from those viewing over the web – from as far afield as Ottawa. These two talks highlight interest in the wide range and diversity of issues within STEM education and pedagogy, which eSTEEeM with its base at the OU, is well placed to engage with. The seminar is still available for viewing at: <http://stadium.open.ac.uk/stadia/preview.php?whichevent=1626&s=31>

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Forthcoming Events

****Education for Employment Colloquium****

5th - 6th July 2011, The Open University, Milton Keynes, UK

For further information on the event please contact Keith Williams, Director eSTEEeM (MCT)
K.Williams@open.ac.uk

****Researching Learning in Immersive Virtual Environments 2011 (ReLIVE11) Creative Solutions for New Futures****

21st - 22nd September 2011, The Open University, Milton Keynes, UK

To find out more please visit the conference website at www.open.ac.uk/relive11

Workshop Report: The Brazil Breakfast, 30th March 2011

PICTURE a country:

- in a good economic situation,
- with a stable population,
- a member of the BRIC countries that some think will overtake the G8 in a decade or so,
- with a high demand for higher education, in particular in Engineering and Technology,
- with the free public provision of higher education reaching a very small proportion of the population (mostly the wealthiest who had access to private secondary education[1]),
- with a strong fee-paying private provision of higher education,
- with distance education making its first incursions into higher education,
- with a government that recognizes the inflexibility of postgraduate programmes to deal with the needs of the country for the development of professional human resources,
- etc, etc...

and on the basis of desk research you may be led to think that this is probably one of the most promising countries for the OU's international ventures.

But before you start dreaming about work across the ocean why not discuss the idea with a group of our colleagues, people from that country, who know the situation on the ground much better than any market research group survey can ever do. And then a new picture starts emerging and unforeseen obstacles need to be considered: language barriers, the prestige and pride of local institutions, the mistrust of foreign for-profit interventions, the strong protectionism of what is locally-produced, the great interest in partnerships but only for mutual benefit and not for profit, etc, etc. So in reality the picture demands a more subtle interpretation. These were the conclusions drawn at the recent Brazilian Breakfast event organised by eSTEEem.

So here is a first lesson for all of us. At the OU we have so many colleagues from all over the world. Let's start the conversations with them; sit at a table amongst colleagues from the same country and get their perspective of reality.

These conversations are so important. What can we offer? How do we want to be seen? Are there any gaps that we can fill?

eSTEEem will be working with Strategy Office to hold similar events focusing on other countries to enrich the perspective on potential international markets.

[1] Only 15% of the population pay for their basic education (International Growth Strategy Development Country Assessments, February 2011, The Parthenon Group for The Open University)

Written by Leonor Barroca, Faculty of Mathematics, Computing and Technology, The Open University.

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Want to contribute to the next edition?

Are you currently or have recently been engaged in developing new approaches to teaching and learning within the STEM disciplines?

Do you have a particular viewpoint on the issues for STEM education in regards to the four eSTEEem priority thematic areas of employment, international, engagement and entrepreneurial?

Then eSTEEem would love to hear from you.

Please send your article of no more than 300 words to the Editor at esteem@open.ac.uk by **3rd October 2011**.

The next edition will be November 2011.

Researching Learning in Immersive Virtual Environments 2011 (ReLIVE11)

Creative Solutions for New Futures

21st – 22nd September 2011, The Open University Milton Keynes



As a delegate to ReLIVE11 you will meet with other leading edge researchers from around the world to

exchange ideas and scholarship. With an opening keynote from Robin Wight, founder of The Ideas Foundation and a creative legend in advertising, we challenge the community to think creatively and look for opportunities to collaborate and innovate. The invited panel speakers from within and without academia bring a range of interesting perspectives and expertise to our discussions and we anticipate a showcase of papers and workshops that reflect the best of current academic research, making ReLIVE11 your one stop conference this year for disseminating, sharing and stimulating your practice in virtual worlds.

Whilst virtual worlds are providing us with platforms for innovation, and new opportunities to understand and address the needs of learners in the 21st century, we are under more pressure than ever not only to continue demonstrating innovation, but to do this at scale, for less money, whilst increasing

efficiency and productivity. The challenge for us all is to contribute to a future where innovations meet these requirements whilst keeping learners, and learning, at the core of all that we do.

With a nod to recycling ReLIVE11 (www.open.ac.uk/relive11) will revisit some of the themes of ReLIVE08, but from the fresh perspective of using all that we have learned in between to explore how virtual worlds can help us and our learners to find creative solutions for new futures.

Call for abstracts (closing date for abstracts 21st May 2011)

We are now seeking proposals for papers, workshops, symposia, posters and inworld events that demonstrate innovation within the following themes: Concepts, Methods and Implementation

Conference registration

- Registration opens 21st June
- Early bird registration closes 15th July
- Registration closes 15th August

Please visit our website for further details www.open.ac.uk/relive11

All about eSTEEeM ...

eSTEEeM is a joint Science and MCT Faculty initiative that brings together academics to develop new approaches to teaching and learning both within existing and new programmes. It builds on existing collaborations within the Centres for Excellence in Teaching and Learning (CETLs) and with other Faculties.

eSTEEeM has built up a picture of existing and aspirational

activity in teaching and learning and in the four eSTEEeM priority areas of; employment, international, engagement and entrepreneurial. It has identified what expertise exists already that we can build on and harness in taking eSTEEeM activities forward.

The eSTEEeM team can be located in Room 115A, 1st Floor, Perry E Building, The Open University, Walton Hall,

Milton Keynes, MK7 6AA and can be contacted via email esteem@open.ac.uk or by telephone 01908 655792.

To be kept up to date on the latest developments please email your details to esteem@open.ac.uk with the words 'Mailing list' in the subject line.

Add us to your favourites: - www.open.ac.uk/esteem