Future learning encounters

Keynote presentation

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Introduction

Changing learning environments- teaching and learning experiences are changing around us- we need to interact with them in new ways. My interests are about online learning and teaching especially their impact on teaching staff. Of course, online or not, learning remains largely unexplored territory. Physicists know more about the universe than psychologists about learning! We need to go forward boldly. We have reached a state of flux as the 21st Century gathers speed.

Many futurists write about four key discontinuities that we will experience in this Century. They are concerned with time and space, mind and body, real and virtual and humans and technologies (Martell 2000).   Their influence on educational institutions is still incalculable but we all know there is a serious shake-up going on!

The early adopters of teaching with computers were considered 'mavericks'. They found it necessary to substantially change their teaching practice, to welcome computers with open arms, took course for themselves, incessantly asked questions of experts, acquired the earliest computers at their school or for home use. Some worked out how to use computers to enhance their usual ways of teaching, others saw computers as a way of transforming their agenda for student-centred learning (Cuban 2001). Truly web-based courses for language learning are still quite rare. Both Web-enhanced Language Learning (WELL), Computer Assisted Language Learning (CALL), still tend to follow traditional models. However, language Teachers of all kinds and at all levels have always seen learning as challenging and engaging- hence they are well placed to take advantage of innovations.

Using scenarios is a way of helping us to explore the increasingly puzzling and uncertain world, in which we live and work. A scenario is a descriptive forecast of a future landscape (in this paper, I call them "planets") that an organisation or institution might find itself in. They are not about forecasting the future but about looking at the possibilities.   Some authorities call using scenario development "strategic conversations" (van der Heijden 1996).

Scenarios help us to make sense of the choices with which we are faced. Scenario planning started in very big organisations to help them understand their external environments. They can also be useful tools for all of us faced with uncertainty and complexity and to look at what's happening within our own practice and disciplines. It's a way too of tapping into our own judgements and exploring our own visions as key resources to help us prepare for uncharted territories. In this way we can avoid the simple "solutions" approach and the risks of trivialising significant decisions.

Usually, business scenarios include commercial, sociological, technical, economic, political, regulatory, ecological and other domains that make up the external environment of the business world. In this paper you will see that I've tried to consider elements close to our hearts such as assessment, research, teaching philosophies and learning technologies. I have especially focussed on the roles of the online teacher. I hope to promote our strategic conversations and ultimately enable us

to work within the realities more happily and successfully. I hope this paper will encourage you to consider our futures, and that of our students by considering "What will we do when this or that happens...?" or "how can we better prepare?".

So here are my ideas for start. For each scenario, I explore what I think will be the implications for online teachers.

Scenario 1: Planet of Contenteous

Landing on Contenteous you find technology as a delivery system. High importance is given to content management systems, integrated learning management systems, multi media, industry standards, DVDs, digital and cable TV. Rivalry between solutions providers is still strong, though two or three market leaders are emerging.
The war between open source software and hardware, between incompatibilities and limited data storage is finally resolved. The early years of the 00s became known as The Dog's Breakfast Era.

The associated pedagogy is that of the transmission model of teaching, where information is transferred from experts to novices. Content is king. There is a strong role for the observation of realities (called Big Brother Learning) using the latest technologies. Initially Big Brother Learning was used for clinical practice but is now being deployed across a wide range of disciplines, including language teaching. Economies of scale are reached through reduced interaction between teachers and learners compared to lecture and question mode of teaching. Customers make choices on where to study from media profiles, online resource availability and league tables of various kinds.

Diagnostic tests, delivered early in the learning process, determine which content and level is needed by which student. Assessment of students' learning is based on reproduction, comprehension and critique. Frequent automated testing is delivered in very small chunks through complex and structured questions. A popular feature is fast, sophisticated automated feedback which also guides students' future learning directions. A major technology development on everyone's lips is the new plug-in that immediately senses who has written an article, for whom, when and what the commercial interests involved might be.

On Contenteous a key role for language teachers is as the content and cultural expert, to develop multi media programmes and to build online libraries and pathways through resources. E-librarians and e-lecturers have closely linked roles. Lecturers need to captivate big audiences. The Internet and digital TV spawns its own lecturing stars and the most successful assume "rock star" status. Support of the elite few requires a very high level of research going on in the background.

Of course there are still a few lecturers campaigning, to actually *be with* their students, rather than look at them on monitors. Some have joined the doctors' campaign for real patients. But they are fewer each year. We will remember them.

Scenario 2 Planet Instantia

IBM estimates that 25% of employees' skills become obsolete every 3 years. With the increasingly global society, language and cultural understanding has become a paramount skill. Instantia meets these requirements through sophisticated learning object approaches*, with information technology seen as the basic tools. The pedagogy on this planet is usually called e-learning. Computer based courses are offered from desks at work or in learning centres. Learners work and learn almost simultaneously. Flexibility and instantaneousness are the keywords. The costs of travel, training facilities and trainers are slashed compared to on Earth.

The role of ambient intelligence in devices is seen as key on this planet. Every device that is connected to electricity is also connected to the Internet. Hence educational providers are able to think both creatively and in a very integrated way about learning devices.

Individual learners assess the value of the learning experience asking: is this learning just for me, just in time, just for now and just enough (known as Tagmania).   With the impact of the skills at work shortage and the rise in importance of "corporate universities", experienced professionals only join an organisation that has its own special university.   The inclusion of e-career development is standard in salary packages.

The key feature of assessment on this planet is authenticity. Employers consider whether learning provision helps to recruit the right people for the organisation. Employers also evaluate the speed and effectiveness of the learning provision by considering the extent to which organisational performances improve. Assessment tasks are always related to specific work or professional needs and are deeply embedded in the learning activities. Gaming technologies are used to create "real-life" scenarios that combine learning and assessment in seamless environments. There is a high level of tracking of outcomes which are automatically transferred to employees' development accounts.

This planet has sometimes been accused of naval rather than star gazing-i.e. the inhabitants spend much of their time exploring the core of the planet rather than considering its environment. Telescopes are no longer in use, for example. However with the increase in effective links between e-learning, performance and knowledge management, an improved systemic approach has been achieved and the advocates of life long learning have begun to see the benefits of including Instantia in their universes.

On Instantia, online trainers support autonomous learning (although many learners exist magically on little human contact to sustain them). Real or virtual trainers are available 24 hours a day, both synchronously and asynchronously. Trainers focus on skills development in employees (to enable them to learn in this way) and on ways of fostering the adoption of a strong in-house knowledge culture.

Scenario 3 Nomadict Planet

On Nomadict there is less stability, less structure, less fixed time for work and leisure, retirement and education compared to Earth. The sense of physical place is not strong (Martell 2000). The Planet Nomadict provides portable learning for mobile lifestyles. Travelling users replace travelling information (Cairncross 1998). Learning on the Planet Nomadict is time independent and individual.   The learners are seen as electronic explorers and adventurers.

Learning online is now called m-learning (for mobile-learning) instead of e-learning. For the first time, learning is truly any time, any place. Learners no longer sit in front of computers. Learning devices are carried, worn or are embedded in person's bodies. The fashion for digital cameras in key rings means that pictures are transmitted as often as text messages. Pedagogy is various so individuals choose based on their cognitive preferences and styles. The learner chooses from the (electronic) learning supermarket.

There are few physical classrooms left. Terrestrial universities, college buildings and corporate training facilities have disappeared; new e-universities have inherited the planet. Students calculate the cost of their courses based on airtime and connection, rather than attendance at class, or purchase of books, as on Earth.

English has become standard for learning, promoting a huge growth for English language courses of all kinds throughout the Planet. The New Oxford Very Concise Internet Dictionary is the all time best e-seller. (The Campaign for Full English Grammar gave up in 2005). However, m-learning is also popular to support modern language development (visit the country, live in the culture and access your course at the same time). Cultural and cross-cultural learning is the very latest hype.

Technologies are highly portable, individual, adaptable and intuitive to use (Sharples 2000). Mobile technologies are seen as essential communication and learning tools, rather than as disruptive, as at the turn of the Century. Main technologies in use are Personal Digital Assistants (PDA) and Palm Tops**,** 3rd generation mobile phones (UMTS), GPS, unfolding keyboards, blow up screens, wireless and personal networks, low orbit satellites, national and international communications network networks, high bandwidth, infra-red connections and e-books. All students have laptops, palm tops and text mobiles. Styli are commoner than pens. Breakthroughs occurred when safety was achieved in the use of mobile phones. Costs of handsets and devices are very low. PDAs were worn in underwear for the first manned mission to Mars. Indeed the latest fashions and jewellery always include a suitable pocket or strap for the PDA

Some people think that part of our sense of identity is based on a sense of not only who we are, but *where* we are and knowing our precise *place* in the world (Harvey 2001). Until the end of the 20th Century this was based on our physical position in the world. At the start of the new Century, Global Positioning Systems (GPS) using a network of satellites fixed someone's location in the world to within a few metres.

These devices transformed exploration and the provision of emergency services. But when mobile phone manufacturers built GPS-type of technology into every-day mobile phones and they became available to everyone. They were heavily marketed because of the cost of development and many teachers started using them with classes.

The war between the PC or the TV as a focus for home a home entertainment gateway was won some years ago. As it became common for children to have a set top box for games in their bedrooms, interactive games became the new chocolate buttons. " Finish your verbs and you can play the game", say parents. At this moment, a few forward looking educators combined games and learning and coined the market.

Habitation on Planet Nomadict heralds the move away from "generic" software applications to providing focussed key learning components geared towards an individual learner. Wearable components (WCs) have "context awareness" and hence interact with the users and their environment. They know when to switch themselves off and, importantly, regularly help to pace the learners, day by day, through their courses. Applications that don't require the Web or the PC are in use, developed from weather boxes, GPS and wireless.

On this planet, students design, negotiate or choose their own assessments, often in collaboration with their assessment helpers. Assessment helpers are sometimes real people, peers or alumni and sometimes programmes based on artificial intelligence. Assessment of learning is in small bites, based largely on projects and outcomes and achieved incrementally. Every assessment event contributes to updating an individual's learning profile and hence suggesting future learning needs. Interaction is evaluated using the latest computer mediated tools. Biometrics ensure the security of learners' identities. Portfolio learners expect to transfer their learning credits easily from one institution to another. The great mobile phone exam scam of 2005, accelerated the demise of several struggling universities and finally promoted the use of biotechnology to ensure authentication of students 'own work.

Teachers, academics and researchers are as mobile as their students are. Many are portfolio teachers- working for several educational institutions and providers, all over the world, at any one time. They have not only a highly developed awareness of the ways in which traditions of learning and expectations vary in different cultures but also the ability to work across discipline and levels of education. They can break activities and content down into tiny components that can be transmitted and studied in small chunks. They are fully comfortable with using online assessment and confident in the technologies that ensure that the student they are assessing is the same one they are teaching. They can relate well to students without needing to meet with them so the issue of plagiarism is less of a concern than on Earth. They focus on promoting the concepts of ownership of the learning process, active learning, independence, the ability to make judgements, self-motivation and high levels of autonomy. They provide and support resource based learning, working with skilled technicians and e-librarians.

Scenario 4 Planet of Cafélattia

This planet is the outcome of Dibbell's prediction

> "Someday the Net will be the summation of the world's total computing resources. All computers will link up into chaotic digital soup. Tremendously powerful and … Hard to harness"(Dibbell 1995)

On Planet Cafélattia, learning is built around learning communities & interaction, extending access beyond the bounds of time and space, but offering the promise of efficiency and widening access. Think of individuals as nodes on a network (Haraway 1991)! The medium of communication – human language-has become even more important than on Earth.

The key technology is the developed, entertaining, effective Internet (beyond the browser!) to allow immediate and satisfying interaction between students and students, and between teachers and students. When domain name availability increased (by extending IP numbers) the Web really took of in language teaching. Rather than a place where millions of users all connect to a handful of large sites, the Internet reclaimed its purpose on Cafélattia as a place where everyone talks to everyone else, equal to equal. Peer to Peer (P to P) technologies survived their legal challenges and become acceptable. Groupware in use is specially developed for learning purposes, rather than based on messaging or corporate meeting software as on Earth. Both co- and remotely- located learning communities (clicks *and* mortar) are of key importance.

Technologies are asynchronous and synchronous group systems to support a wide variety of environments for working and learning together. Learners connect through both low and high bandwidth devices and systems. Hence the technologies are seen only as mediating devices, promoting creativity and collaboration.

Cafélattia learning appeals to a very wide range of people including the increasing numbers and percentages of "grey learners" who have a great deal to offer to others, a desire to learn through non-traditional means and who have the time and resources to access networked technologies.

The pedagogy is based on notions of a very strong social context for learning with the model of acquisition, argumentation and application. A key activity for learners is finding and interacting with like-minded individuals anywhere on the Planet (e.g. by gender, by interest, by profession) and by being intellectually extended by dialogue and challenge from others. Learners express themselves freely through speech and text. The roles of reflection (an essential tool of expert learners), professional development and the sharing of tacit knowledge are of critical importance. Learning is contextualized and given authenticity by the learning group and the learning community (rather than by the University, as on Earth). On and offline resources are important, but electronic and structured information support and stimulate the learning group rather than replace the active, participative learning experience.

Cafélattia approaches are very popular in professional and Higher Education such as nursing, medicine and management, and, increasingly in schools.

Assessment is based on complex problem solving and knowledge construction skills. Assessment is learner driven and negotiated with peers. Assessment is seen as non-restrictive and an enhancement to and motivation for learning. Hence, the level and scope of assessment are largely the product of interaction with other like-minded learners. Group and peer assessment has become the norm. 360 degree assessment is common. Evaluation of contributions to text, interaction and complex problem solving is all automated.

Teachers on Cafélattia think globally but are able to turn their ideas into local and contextualized action. They see the technologies as yet another environment for learning rather than as tools. They are experts at mentoring individuals online and may be seen as companions in the democratic networked learning process, rather than teachers as such. They know when to take part, when to provide expert input, when to act as a peer and when to stay silent. They also have very highly developed skills at online group development for learning and in the use of online resources to stimulate groups (the role I call e-moderation). They know how to welcome and support learners into the online world and to build effective online communities. They act as intelligent agents and facilitators. They have the ability to visualise others in their situations. They know how to allow a sense of humour and fun to manifest itself online. They know how to build gradually on the processes of exchanging information and how to turn this into knowledge sharing and ultimately into knowledge construction.

With millions of individuals (as well as businesses and universities) connected to the Internet, powerful PCs, fast bandwidth, and peer-to-peer software that let people communicate and share with each other, there was a real breakthrough in our ability to communicate, collaborate, and participate, but in making art, creating software, guiding government, forming new social organizations and sharing new ideas, literature and music. An interesting debate on Cafélattia has been around the drivers towards commonality or difference. Some professions have converged with others - particularly with technology. Does the longer future belong to the generalist or specialist?

The Language of the Internet (Unicode)

The Internet is international, and this brings up the question of how we represent many different kinds of alphabets and writing systems with only 256 ASCII character codes. Until a few years ago, the problem was solved by creating different 'code pages' where the character codes 160 and above are reserved for a particular language's needs. With the 'western' encoding, you see Spanish words here: `acción en español`. If you change your browser's character set to Greek, and you have a Greek character set installed, those words will become unreadable. To process information in Asian languages becomes even more complicated ! (Lunde 1988). The

standard has been developed in the Planets of the future to unify the encoding (uni-code, get it?) of all existing written languages. In Unicode, every character takes two bytes to represent, which opens up plenty of breathing room for additional encoding (like lengthening telephone numbers!).

Conclusions

It's likely that all the planets will have elements of reality and there will be a variety of players and processes. Institutionally, we will probably see further combinations of these scenarios, such as universities with corporates or colleges partnering media companies. You can see how important language teaching will be on all the Planets, and that it cannot continue merely in traditional ways.

All Planets have special issues and opportunities to offer language learning. Many of the Cafélattia approaches are in the area of Language Teacher development. Currently there is not as much innovation and excitement as I originally imagined in a global society with good Internet access! Much of the learning looks similar to that in other disciplines and applications. There's a way to go!

However, patterns of the use of information & communication technologies cannot easily be determined, as the ways learners and explorers use new forms of online learning offerings are unpredictable. Acceptable use and the meaning given to new technologies are a complex mix of "distinctive and perplexing forms of rational and non-rational behaviour" (Silverstone and Haddon 1996) p.45). Silverstone and Haddon see the implementation of information and communication technologies as a process of "taming" wild objects, and adapting them to the routines and rituals of every day life- a process that has largely yet to happen on a wide scale for teaching and learning. Technology, like language, gets adapted daily! I think that as the online teachers increase their skills and add the magical human touch, the wildness can be changed in a more ecologically friendly way!

I hope you will start your own strategic conversations, challenge these scenarios and develop new ones. I hope they will help you to see through the confusion, spot developments before they become trends, see patterns before they fully emerge, and grasp the relevant features of learning technologies that do truly reflect the needs of language learners and teachers. I hope they will help you find a suitable pathway through inflated claims (vendors?), unrealistic expectations (students and users?) and unformed strategies (politicians?). By the way, this is best done with others- from other departments, faculties and universities! Even within our own institutions, dealing with complex scenarios and potential must be done in multi-functional teams. We need to engage fully the providers of the technologies themselves too – in this way deeper understanding and dialogue will emerge. I believe you will be convinced that there is a very strong role for online language teachers in all these scenarios, but the way these responsibilities and privileges are discharged may be rather different from Earth.

So what will actually happen? To a large extent, it's up to you vision it and action it! You can be sure that language learners will be on the Web. Research in a cluster of schools and kindergartens in late 2001 showed that 50% of the 3 year olds in the group recognised components of computers, were able to turn them on and off and had mouse skills. In 2013 these children will be secondary students whose whole formal education experience will have included access to IT.

When you approach each of these planets, check out the atmosphere for yourself before landing. Does it support life for your level of teaching, your language, your culture? Where will the power come from to sustain you on this planet? Are you the first to walk on this planet? And do you want to be? If not, what can you learn from previous explorers? Either way, please make sure your experiences are available for others who follow you, both your successes and your failures. In this way, not only is knowledge built, but a new explorers' community.

Of course, closing the gap between what we have now in education and building a productive and successful future inevitably involves organisational change. The gap closing exercises probably involve many years so we need tactics as well as strategy along the pathways.

So as you can see, it's still teaching, but not as we've known it on Earth. Most of the skills we have already acquired are much needed, but there is more… We all need to be out there, together, exploring. In this way, the amazing and diverse planets will continue to be held in the hands of the teachers and learners.

Examples and follow up from Planet scenarios

Overview of currently available technologies and examples:
http://collaborate.shef.ac.uk/egrp.htm

Unicode standards
http://www.unicode.org/

Nobel survey http://www.cisco.com/nobel/survey/

Contenteous

Boxmind (Stanford, Princeton, Tale & Oxford)- funded by venture capital.
www.boxmind.com

Quote: "your chances of getting through the Oxford admissions system will be higher than our acceptance rate of websites applying for our approval". Niall Ferguson (founder of Boxmind) (O'Reilly and Hellen 2000)

Fathom 'content alliances'
http://www.fathom.com/index.jhtml

Instantia

UK "*University for Industry*" – based on independent learning through work. Self-managed, supported by learning contracts" (assessment: through various in National Qualifications framework)
http://www.learndirect.co.uk/- home page

Principles of knowledge management

http://www.bus.utexas,edu/kman/kmprin.htm

Technologies

The battle for speech technology standards escalated when a collection of industry leaders submitted to the World Wide Web Consortium (W3C) a proposed framework for delivering combined graphics and speech on handheld devices.

http://www.computerworld.com.au/IDG2.NSF/a/0005C942?OpenDocument&n=e&c=CT

*Learning objects:

"The technology delivered training of tomorrow is going to be assembled, not authored, from large reservoirs of content presented to the learner…and more emphasis will be placed on building knowledge bases that can be published on the fly" *Elliot Masie, The Masie Centre*

"In the web based environment, learning objects may be constructed through combining several sub-elements such as HTML, graphics, audio, video or other media elements, as well as documents, Java, and ActiveX components to provide interactivity which is highly desirable in constructing engaging learning experiences.

Additionally, Learning Objects may be delivered into non-Web environments such as to interactive TV and to PDAs (Personal Digital Assistants)". *Charles Jenning (Online Courseware Factory, 2001*).

Use of txt

http://www.newwave.co.uk/news/amywatsoncolumn.asp?Key=58

Open University Corporate University Services

http://www.corous.com/

Nomadict

The developing technologies

http://wearables.cs.bris.ac.uk/
http://wearcam.org/mcluhan-keynote.htm
http://www.pjb.co.uk/mobile_comm.htm
http://www.trainingzone.co.uk/item/37933
http://www.dcs.gla.ac.uk/~johnson/papers/mobile/HCIMD1.html
http://human-factors.arc.nasa.gov/ihh/psychophysio/
http://www.microsoft.com/pocketpc/
http://www.forrester.com
http://www.xybernaut.com/
http://www.xybernaut.com/MAV_banner.htm
http://iswc.gatech.edu/
http://www.computerworld.com.au/IDG2.NSF/a/0005C942?OpenDocument&n=e&c=CT

Cafélattia

Technologies

http://www-3.ibm.com/software/info/university/products/open-tech/
http://www.charmed.com
http://www.cs.columbia.edu/graphics/projects/mars/mars.html
http://www.openp2p.com/

More about networked learning

http://csalt.lancs.ac.uk/jisc/
http://collaborate.shef.ac.uk/spender.htm
http://www.shef.ac.uk/uni/projects/wrp/sem2.html
http://cbl.leeds.ac.uk/~tim/networked_learning/
http://www.icbl.hw.ac.uk/jtap-573/cultures.html
http://www.ucisa.ac.uk/TLIG/conf/tlig00/w26/
http://www.talisman.hw.ac.uk/tman-events/240399/report/DMcconnell.html

Role of the e-moderator and online teacher

http://oubs.open.ac.uk/gilly
http://oubs.open.ac.uk/e-moderating
http://www.e-moderating.com
http://www.media.uwe.ac.uk/masoud/cal-97/papers/bowski-f.htm

Online assessment

http://materials.netskills.ac.uk/info/module52.html
http://www.derby.ac.uk/ciad/
http://www.scaan.ac.uk/hw_caa.doc
http://www.ltss.bris.ac.uk/VLEintro_5_3.htm
http://www.lboro.ac.uk/service/ltd/flicaa/conf2000/index.html
http://www.lboro.ac.uk/service/ltd/flicaa/conf2001/index.html
http://www.caacentre.ac.uk/

Web sites about scenarios

http://www.sgbs.strath.ac.uk/webnews/shownews.asp?newsid=32
http://www.cfsd.org.uk/events/tspd6/tspd6_scenarios.html#s
an example from the public sector (BBC)
http://www.lbs.ac.uk/sysdyn/research/scenario_modelling/scenario_modelling.htmla
conference at Strathclyde about scenarios in 2002:
http://www.gsb.strath.ac.uk/foresight/

About the Future

http://www.tfi.com/rescon/TF_Techniques.html#intuitors
http://oubs.open.ac.uk/future
http://www.sciam.com/1999/0899issue/0899dertouzos.html
http://www.wfs.org/prgwforecast.htm
http://www.iwt.org/iwt_seniorsummt/subgroup_futureofcomputing.htm
http://www.foresight.gov.uk
http://www.wfs.org

Birchall, D. & Tovstiga, G. 2002 Future Proofing. ExpressExec, Capstone Publishing, Oxford.
Cochrane, P. 1998 Tips for Time Travellers Texere Publishing
Mercer, D, 1999, *Future Revolutions* Orion London

Commissioned reports on the future of education

Farrell, G.M, (Ed) 2001 The Changing Faces of Virtual Education
www.col.org/virtualed. The Commonwealth of Learning (COL)
Mercer, D, 1999 The Future of Education in Europe Until 2010AD - IPTS (European Commission, Seville
Mercer, David and Malcolm Fritchley 2000 (DfEE), The Future Of Life-Long-Learning, DTI Foresight Ageing Panel

You have doubts?
http://www.newtech.org/address10_en.htm

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