NOTHING NEW UNDER THE SUN

By DR. A.G. LARGEY, MISS. PATRICIA TIMMINS

"What has been is what will be, and what has been done is what will be done; there is nothing new under the sun" Ecclesiastes 1:9.

Is creative teaching something new? Is it not true that teachers have always found creative ways of making their teaching more creative, engaging and effective for their students no matter what century they were in and that includes those in the 21st century? It would appear therefore that '***there is nothing new under the sun***'.

However, while it is probably agreed that creative teaching is not a new concept, our opportunities to deliver creative teaching has changed and changed dramatically with the advent of computers and the Internet. Perhaps there is something '***new under the sun***' after all. This does not mean that teaching and learning using computers and the Internet are going to be automatically creative. Teachers and students will have to understand this changing environment, this electronic learning, this eLearning and adapt to the changing technology and the changing learning environment**,** if they are to make best and most effective use of them. ELearning has radically changed the teaching paradigm.

'***What has been is what will be***' could refer to the creative use of teaching and teaching materials in the traditional, face-to-face classroom. Teachers have stimulated and involved students for generations in creative and imaginative ways while trying to cater for the different levels of ability and the different learning styles present in every classroom.

'***What has been done is what will be done***' could refer to the fact that teachers will still have to be creative and still have to cater for these different levels and styles when using computers and the Internet in their teaching and learning and, when using eLearning. From this point of view perhaps '***there is nothing new under the sun***'.

However, the fact is that the computers, the Internet and eLearning are new and require new visions and different approaches on the part of the teacher and indeed the learner as well. For example, in this new eLearning environment, students will have more control over when and where they learn and the teacher will have to provide a range of materials and pedagogies which give the students more choice over how they learn. Learning environments have changed. A new mediating tool between the learner and what has to be learnt is now the computer and the Internet. This means that teachers may have to be brave enough to 'give away' control of learning to the students.

With the introduction of these powerful new tools, teachers must reassess their teaching methods, the learning styles of their students and the new learning environments, if they are to make creative, imaginative and effective use of them.

In the same way, that teachers have always been creative in providing for the different learning styles in their classrooms so they will also have to ensure that this happens in the eLearning environment for teaching and learning on the Internet.

A well-designed lesson whether a traditional face-to-face one or an online one, acknowledges that students are active constructors of knowledge, not passive recipients, because they are encouraged to seek new information and to discuss difficult issues with their peers. A well-designed eLearning class should be as effective as a well-designed face-to-face class .

Education over the Internet

'Education over the Internet' is still in its infancy and there have been many false starts. Because of its relative newness these false starts have been based on unreliable assumptions and propositions. These have included the assumption that traditional classrooms can simply be uprooted and transplanted on top of this new technology. Others have assumed that nothing will change much, the learning dynamics will remain the same when the new technology is introduced, and the teacher will still remain the front of all knowledge and will 'deliver' knowledge to passive learners over the Internet. The opposite of these assumptions is probably more true; traditional courses and teaching methodologies will require change when moving the teaching and learning to an environment where learners do not have to be in the same location as fellow learners, nor in the same place as teachers/tutors. Teaching methods and pedagogies must change and adapt to these new environments. The environments themselves will be different to what most teachers/tutors experienced in their youth. Collaborative and co-operative experiences used frequently in the classroom will be totally different over the Internet.

We have experienced a couple of generations in the 'development' of the Internet in the education world, the development of eLearning. Each of these has led on to better and more creative use of it in the creative teaching of many subjects.

First generation eLearning

The first generation of eLearning or Web based learning programs focused on presenting physical classroom-based instructional content over the Internet and was simply an attempt at emulating classroom courses. In many cases all that had changed was the 'access'. The student gained access to the materials, usually only in text by logging on to the Internet and following a set of instructions on a web page. These were, in their best form, classroom courses which became 'courses behind glass'. They consisted of page after page of content, text and graphics, with point and click quizzes. The educational value of such courses was limited. They could be described as 'Shovelware' content, as simply shovelled from one medium to another, the book to the computer. There was an abundance of 'electronic worksheets'. If the learner were simply to print the materials the learning experience would be the same, so no educational value was really gained. The student would probably experience the same learning experience from purchasing a relevant book, sitting at home, reading it and completing the examples. Whilst for some learners and perhaps some courses this is adequate and it seems a waste of time and effort to use the powerful Internet and the power of the computer to do this. Even traditional classrooms included a blend of experiences. The Shovelware courses and materials had little of any blend or mixture of learning experiences. Text and graphics placed side by side hardly constituted a big enough blend. The learning experience had made no quantum leap; there had been no opportunities for creative teaching or creative learning.

Second Generation eLearning

In the next generation of eLearning materials and courses, designers moved towards a 'blend'. While it is a fairly new term in the literature, the concept of a blend has been around for decades. Good teachers have been using blends within their teaching environments to a greater or less extent for a long time. What, until recently, they have not been able to bring into this blend is the computer and the Internet. Now the blend is recognised as a blend between online and offline learning experiences. The blend would include Teacher led activities such as; traditional classroom teaching, virtual online classrooms, live

videoconferencing. Student or self paced activities would include Instructor-led classroom via email, computer based training, study guides, manuals, books, on-line resources and databases. On-line activities would include communication tools, chat, instant messaging, bulletin boards and of course good on-line learning resources.

The second generation eLearning was a big improvement but it was still missing important ingredients. Whilst there were more opportunities for creative teaching and learning in this generation, the on-line materials had not developed enough from the first generation; the pedagogical approach was still missing some aspects that would allow creative teaching and learning in this environment.

An example of creative teaching and learning for 21st century students

Background

The creative industries have been growing at an alarming rate on a worldwide scale over the last few years. These industries include such areas of growth as multimedia and games. A real industry needs creative workers; creative workers need 'training', training must be relevant and appropriate. Education must rise to the challenge and solve this dilemma. Let us consider the situation in India as far as the Games industry is concerned.

According to a study by Andersen Consulting, the Indian multimedia and graphics industry, currently pegged at $550 million, is slated to grow at 30 percent annually over the next three years and achieve revenues of US$ 15 billion by 2008. However it would appear that the multimedia/Games capability industry is far from ready to take advantage of this potential growth. The 'Tardy growth' of Indian Multimedia/Games Content Industry has been attributed to lack of expected export order, lack of domestic market, lack of feel and sensitivities towards the special needs of the (export) market, lack of indigenous content corpus and, finally, lack of skilled/experienced manpower. Creative teaching and learning within an eLearning environment may best address this last reason, this 'skills gap'.

The challenge

A similar situation is encountered in many other countries. It is unlikely that this gap will be filled by a 'quick fix'. A more long-term approach will be required; one that needs to begin in the secondary schools, one that will need something 'new under the sun'. This may only be achieved by relevant, focused and quality training of students in the appropriate areas and skills complemented with new creative teaching and learning. Most education systems are exam driven and final output focused. Consequently creativity in many schools and colleges appears to be 'taught out' of students. Courses must be introduced that provide internationally recognised, valued and creative courses with certification. Pathways must allow progression in skill acquisition, the 'unlocking of creativity' and ultimately employment in the creative industries, or even self-employment. The multimedia/games industries require this skills and Indian education must respond by creating an indigenous creative workforce that can then take advantage of the outsourcing opportunities. This is the challenge for the Schools and Colleges. In delivering these creative skills and knowledge should we not use creative teaching methods?

In the 21st century, traditional classrooms and methodologies will not be sufficient, cost effective is certainly not the only option. New technologies must be used in the solution. The power and accessibility of the Internet must be harnessed. 'eLearning' and creative teaching may provide part of the solution. The 21st century student outside of schools is used to technology being a big part of their lives. They do not want to 'power down' when they come to school.

However care should be taken that traditional classrooms are not simply uprooted and transplanted on top of this technology, as mentioned before. The integration of the new technologies has not always been handled properly and sometimes the power of the new technologies is lost when they are used to carry out similar things that have always been done in our traditional classrooms. Education must ensure the new technologies are seamlessly integrated into modern learning environment and do not appear as 'bolt-ons' that change nothing. 'Change of access' is not enough. Indian education must learn form the 'eLearning mistakes' of the West.

If this creative eLearning approach is to be adopted then many things will need to change and the education system, the student and the teacher must recognise this. eLearning, if designed and delivered correctly, will allow this creative teaching and learning. However the emphasis needs to be on the 'Learning' and not the 'e' - inherently eLearning is about 'Learning'. This will require many paradigm shifts in many different quarters.

Creative teaching and learning in an eLearning environment would require many things such as:

- **The support of the management -** any change will not take effect without this support
- **The support of the teacher -** again this support is needed and staff training and staff development are absolutely necessary
- **The support of the student -** hopefully this will be the least difficult as most young people embrace the new technologies, most are 'Digital Natives'
- **Appropriate learning materials -** innovative, attractive and engaging materials are required that meet all the different learning approaches of the learners
- **Appropriate resources, physical and financial -** the technology must be available and updated when required
- **The adoption of an appropriate pedagogy -** the pedagogy must reflect all that is good in the present situation plus the added features that the new technology can provide and how the two intermix
- **Appropriate presentation mediums and interfaces-** the eLearning environment must appeal to the learners,
- **Evaluation and recording -** provision must be made for these to allow feedback and analysis facilitating future development.
- **Appropriate courses -** relevant courses that will provide skills and knowledge of the growing multimedia/games industries to meet the challenges outlined above

These requirements fall into two categories; support and financial issues and pedagogical and methodological issues. The latter issues include the creation of different learning environments, pedagogical changes and the creation and adoption of relevant creative learning and teaching materials. The challenge is also to adopt strategies so that as many learners as possible have access to such environments, pedagogies and materials. Consider two of the above requirements to ascertain what the challenge really is.

1. **Adoption of a new appropriate creative pedagogy and approaches**
2. **Introduction of creative quality learning and teaching resources**

1. Creative Pedagogy

Schools and colleges, as well as looking at the introduction of relevant courses in the areas of Multimedia and Games, must also look at different delivery methods. There will be a variety of audiences and with present and future technology education will obviously not be confined to the physical classroom. The audiences will consist of students within the education system, but will also consist of those on the periphery of the system and

indeed those outside the system. It will consist of those who want to retrain, those who want to change career, those who want to up-skill, those who want a qualification for their present skills plus many more.

It is unlikely that traditional didactic teaching methods, nor even perhaps full time education, will be entirely suitable for everyone and more progressive approaches and different timetabling arrangements will be required. Digital Distance Learning will be a major factor in any solution.

As suggested earlier, a blended approach is most suitable. The challenge is to get the 'blend' correct. Teachers have been using mixtures of resources, mixtures of interaction, teacher led learning and student led learning etc for many years in many different situations. What will be required however will be the blending in of new learning opportunities afforded by new technologies. The blend now has many more parts than before and this mixture must be carefully handled. The role of the teacher is no less important, in fact it is probably more important now. In the areas of multimedia and games teachers will be required more and more to adopt the role of facilitator rather than the role of knowledge expert. They must encourage innovation and creativity. This is the creative challenge to the 21st century teacher.

The new technologies will provide a variety of on-line learning approaches not previously available. These will include on-line face to face situations between teacher and student, live eLearning, self paced on-line learning, live demonstrations, on-line, master classes, collaboration on-line, synchronous and asynchronous tutoring, discussion groups and the development of communities of practice as well as simple knowledge acquisition. All of these methods require changes in teacher, student and classroom organisation. The management of these changes is another major challenge to Indian education.

2. Creative Learning materials

It is widely recognised that learners do not all learn in the same way and they do not even learn the same things in the same way. Individual learners have a variety of learning approaches and use these approaches in varying degrees in different learning situations, e.g. visual, auditory or kinaesthetic. Students preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analysing and visualising, steadily and in fits and starts. A good learning environment must also allow for the construction of knowledge, the constructivist approach and, more specifically, social constructivism. Any learning materials that are produced for the eLearning environment must reflect these differences and this underpinning theoretical perspective.

Good teachers have for many years provided learners with many different opportunities to learn according to their preferred learning approach. To maintain this good practice any learning materials that are provided for this new environment must be suitable for as many approaches as possible and the environment must allow the social construction of learning. Consequently good learning materials must be in several formats and foster and encourage collaboration and co-operation. Learners must be able to choose their own personal approach and have the opportunity to engage in discourse with others and collaborate and co-operate in the learning environment just as they would in the normal classroom.

Creative Materials and pedagogies used by Synergy Learning in Multimedia and Games courses

Synergy Learning, an eLearning Resources and consultation company in Belfast Northern Ireland, has been developing such pedagogies and materials for several years now and has built up a large amount of

expertise and eLearning resources, i.e. learning resources that can be placed into new eLearning environments which allow all of the above challenges to be met. They have developed these resources in a variety of different formats to account for the different learning approaches of their students. They have also, in conjunction with examination bodies, written and accredited several courses in Multimedia and Games that would be suitable for the challenges posed to Indian's education system. These courses are internationally recognised and carry university weightings. The courses are available for secondary schools, colleges and universities.

The courses cover such topics as Digital Graphics (Adobe Photoshop), Web development (Macromedia Dreamweaver), 3D Animation, Modelling and Environments (3D Max), 2D Animation (Macromedia Flash), Multimedia Production (Macromedia Director), Sound (Sound Forge), Video editing (Adobe Premiere), Compositing video (Adobe After Effects), Games Platforms and Technologies, Games Engines, Object Oriented Modelling in Games, Games Design, Games Audio, Narrative Structure in Games as well as many 'Media' related topics.

The Synergy Pedagogy

The pedagogy supported by Synergy Learning operates in an eLearning environment underpinned by social constructivist learning theory which blends 'face to face methods, tutor led demonstrations, student research, learning tasks, on-line learning materials, off-line learning materials, collaborative and co-operative assignments, teaching on demand, self paced learning, student centred approaches in varying degrees depending on what has to be learnt. This pedagogy allows for a variety of different learners in a variety of different situations. The pedagogy is suitable for students:

- taking full time courses in schools and colleges with an allocated tutor and designated timetable
- taking part time courses in schools and colleges with an allocated tutor and designated timetable
- taking an online course in a specified time period with synchronous and asynchronous tutor allocation
- taking an online course at their own pace with no tutor allocation and no time allocation
- a mixture of the above

The pedagogy is suitable for students who do not wish to attend college or school on a full time basis, students who cannot attend due to distance and travel restrictions, students who are in employment and wish to work at the office or at home with minimal attendance and a combination of all of the above.

The Synergy eLearning materials

These are on-line materials that are extensively used by the students in any of the above blends. When developing the eLearning materials for the multimedia/games courses Synergy went through three phases.

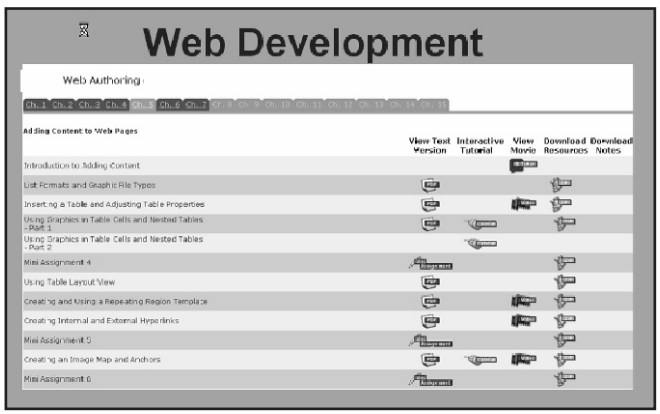
1. Analysis of what had to be learnt. In these courses learning includes: Mastery of Tools, Skills acquisition, conceptual understanding, meta models such as critical thinking, research methods and meta cognition.
2. Consideration of the different learning approaches such as Drill and Practice, constructivism (mental models and scaffolding) Social constructivism (Social activities, communities of practice and common knowledge).
3. Development of different types of materials which consisted of
   a. Temporal Models (movies and demonstrations)
   B. Spatial Models (graphics, 2D Models, 3D Models)

c. Process Models (interactivity, mimicry)

These models include pictures, graphics, diagrams, text, learner interaction, step by step activities, demonstrations, simulations, sound/speech and learning as well as assessment tasks.

The materials were created as a series of small 'Learning Objects', which can be used and reused in a variety of ways. They can be in the order provided by Synergy or they can be presented in different combinations depending on the course being followed. Such granularity provides flexibility and versatility for both the teacher and the student. Usually these materials are uploaded to a Virtual Learning Environment such as Blackboard, Web CT or Moodle. These environments provide the functionality to allow tracking, assessment, correspondence, the allocation of tasks etc.

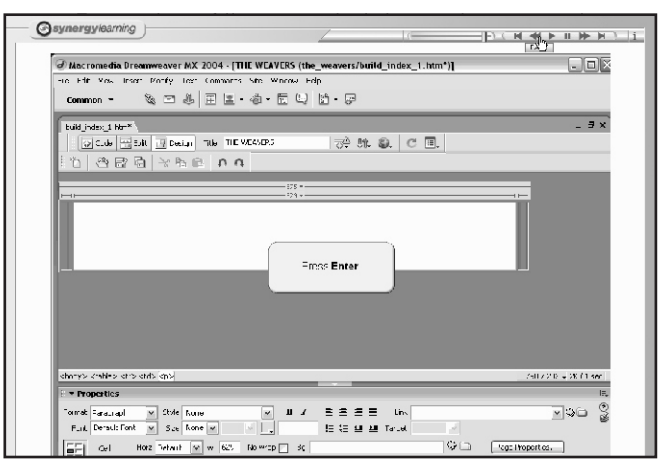
Examples of the eLearning Materials.



This is how the Synergy eLearning materials are presented in a simple Intranet or in a Virtual Learning Environment, a VLE.

The list of topics is presented on the left and the different icons on the right represent the different types of learning materials. (Text, interactive tutorials, Movies, and resources required for the Learning Tasks. Each topic listed on the left has more than one type of learning material associated with it on the right. This graphic shows the granularity and indeed the amount of the materials. It also shows the different methods that are available to the learner to choose from, which will suit their preferred learning approach or combination of approaches.

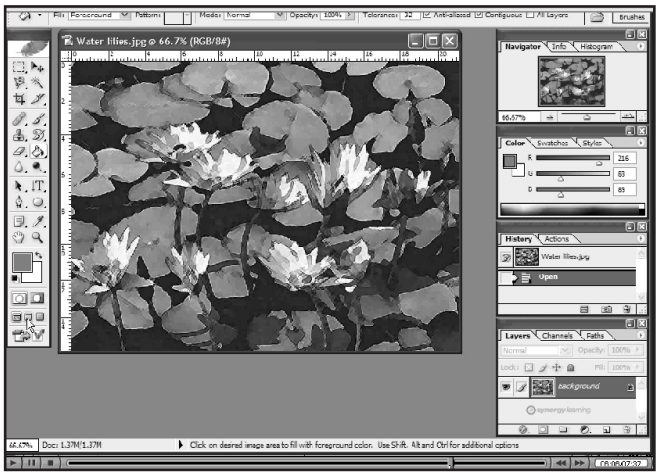
An example of an interactive tutorial. This is a simulation of Macromedia Dreamweaver and the student has to actually click on menus, enter data and interact with the interface. Software tools and skills can be learnt without having access to the actual software.



http://www.synergy-learning.com/services/ services_vle.htm

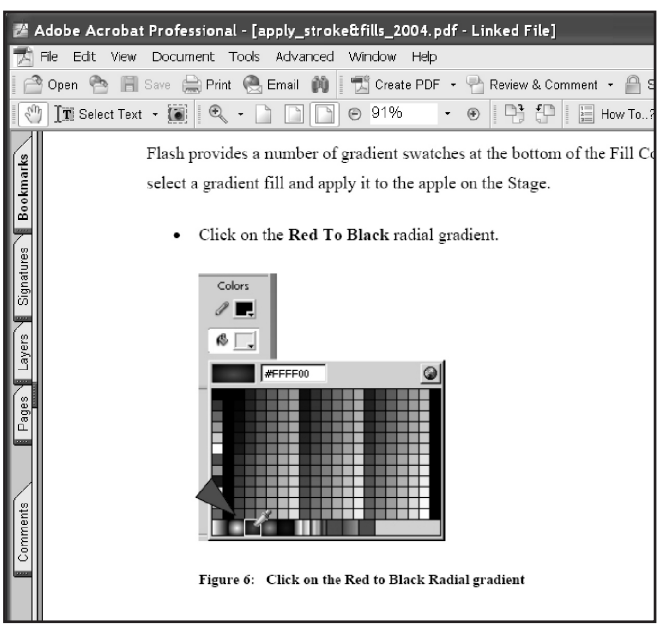
These are Virtual Tutors. They are interspersed throughout the materials and provide the student with relevant information in an engaging way. The animated head explains important points or give guidance on what to do next.

These are examples of demonstrations and information movies. The first example demonstrates the tools of Photoshop with a spoken commentary. As it is in the form of a digital movie, the student can 'scrub' back and forward. This interaction not only allows the student to listen and re-listen to the commentary but provides excellent

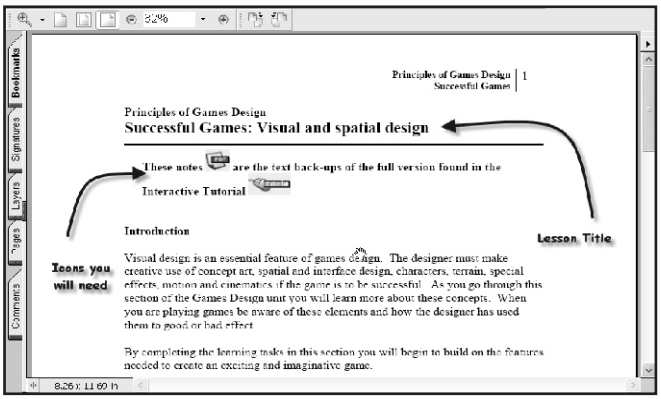


referencing capabilities. This is also excellent for reference.

The second one involves two game professionals talking about visual style in games design.



These are examples of text learning materials. The materials are provided in PDF format and students can work through them in a linear and logical manner.



Conclusions

It would appear that indeed there is 'something new under the sun'. Teachers have, within eLearning, opportunities to be more creative in their teaching and learning. They have opportunities to develop new creative pedagogies that will be possible in environments where the students are not in the same room as the teacher, in environments when the students are not always working at the same time, in environments where students control the pace of learning environments, in environments that are different from traditional classrooms to mention a few. Teachers and students need also to recognise that these environments are different in many ways from their traditional environments and this difference in itself will allow teachers to provide creative teaching for 21st Century students.

ABOUT THE AUTHORS

Dr. A.G. Largey RD
Senior Learning Advisor, Synergy Learning
alan@synergy-learning.com
Tel +44 28 9087 8889, Mob +44 07867 901552

Alan Largey was born in Belfast, educated at Belfast Royal Academy, Queens University and the University of Ulster. He has spent nearly 30 years teaching in West Belfast where he developed a Multimedia Pedagogy which was the subject of his Doctorial Thesis. He has always been interested in the use of computers in developing innovative and creative learning environments using multimedia and social constructivism. His interest now is in eLearning and the development of the necessary pedagogies and materials with Synergy Learning. Alongside his career in teaching, he was a member of the Royal Naval Reserve where he held Sea Command of a minesweeper.

Miss. Patricia Timmins MEd
Learning Advisor, Synergy Learning
Pat@synergy-learning.com
Tel +44 28 903288830

Pat Timmins' career has been in the teaching of English in West and North Belfast, where she held the posts of Head of Department of English and finished her teaching career as Vice Principal of a secondary school. Her interests have been in the psychology of learning within innovative learning environments and the creation of innovative learning materials especially in the learning of English. She now works as a learning advisor with Synergy Learning.