

Story Based E-Learning

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Abstract

Creativity and innovation are the keys to continued advancement in business as well as education. Some of the traditional pedagogy based programs. Particularly in engineering and information and communication technology (ICT) are facing challenges in attracting and retaining students. It's imperative to use innovative pedagogical models to attract and retain students. E-learning systems can play a key role in providing creative and innovative pedagogical solutions by using digital storytelling as the underlying model.

This article discusses how creativity and innovation can be enhanced with e-learning systems based on digital storytelling. A story creation model called movement-oriented design (MOD) is introduced for systematically developing effective digital stories, in conjunction with story creation principles articulated by Robert McKee, a Hollywood guru of script writing.

Encouraging creativity has become more important for the current engineering and ICT workforce than ever before to meet the challenge of international competition. Digital storytelling can provide the creative ingredient that can enliven ICT and engineering programs at many levels: e.g., creating innovative courses and providing innovative content, delivered with innovative pedagogy using e-learning systems.

KEYWORDS: Storytelling, ICT, MOD, Digital Storytelling.

INTRODUCTION:

“Long time ago in a faraway galaxy”, as soon as you read or hear this, the expectation levels rise, and you would expect a grand story of epic proportions to unfold. From ages, good stories have made their presence felt in the minds of people and when used as a tool for education, they have been very effective in driving the point across and making learning memorable.

However, stories need to be written well and should fit the context well. Stories that are not relatable or that are not addressing a problem or have no clear connection with what is being taught can ruin the experience of learning. In custom learning, story based learning methodology is an effective mode of teaching.

The Impact of Storytelling in the Learning Process

Good stories even if told with simple graphics or animation can be a far better engagement tool than say a complex gamification strategy especially when you are looking to quickly deploy a course and at a reasonable cost. Even in popular games such as Assassins Creed or Age of Empires, stories are used to arouse the interest of the players. When the player starts a campaign using an avatar of say Chengiz Khan, the campaign milestones have short stories of Chengiz Khan's childhood, his upbringing, the way he united the tribes, and the strategies that he employed to conquer various lands. This is done using illustrations backed by a booming and an accented voice-over (adding to the realism and fun element). I have seen this approach working in many strategy games.

DIGITAL STORYTELLING:

With advancements in digital audio and video capture technology and editing software, digital storytelling is becoming a part of modern life, making it easier to create innovative e-learning content presented as digital stories. Such innovative content can not only make courses more attractive, but can also lead to deep learning.

Some of the new pedagogical models based on storytelling include: story-centered curriculum, proposed by Roger Schank, and scenario-based curriculum development, suggested by Ray Bareiss & Sukhjit Singh. The common theme that permeates these pedagogical models is: "learning through stories."

Stories have been used as educational medium since prehistoric times as they encapsulate four crucial aspects of human communication: information, knowledge, context, and emotions. Embedding stories as digital media, i.e., digital storytelling, is therefore not only desirable, but almost essential for producing engaging e-learning content.

Creativity and innovation are valued by the modern industry more than ever before; and at times, more than technical skills. Chris Stevens defines creativity as "the ability to generate and use insight." Innovation implies incremental improvement to a system. Most people are capable of being creative and innovative, but often do not know how to get their creative juices flowing.

Our challenge is to produce e-learning systems that supports creativity and innovation. Trying to "teach" creativity and innovation with traditional lecturing pedagogy would be a contradiction. To lead by example, the courses that intend to inculcate the spirit of innovation and creativity should themselves be presented with innovative pedagogy, such as digital storytelling.

E-Learning and Digital Storytelling

E-learning systems that just transform the traditional educational content (for example, books or lecture notes) into digital media are not successful; because, e-learning content that presents only facts and figures can lose the learners attention more easily than a good

lecturer, who can capture the learners' attention with personal charisma. With e-learning content, the lack of personal connection (with a real teacher) can be overcome by creating "educational stories" that embody good storytelling principles.

Good storytelling principles have been articulated by the masters of storytelling since Aristotle. These principles can also be applied to develop good educational stories. To capture and maintain the learner's interest, a story's narrative must connect with the learner's emotions and create emotional movement. Any learning that happens with a story, especially one that provides an emotionally moving experience, is much more persistent, and therefore, easy to recall.

McKee Principles:

Robert McKee, the Hollywood guru of film script writing has articulated principles for creating effective stories (McKee, 1998). A subset of these "McKee Principles" can be applied for creating good educational stories as well.

Firstly, McKee defines emotional charge as the level of built up emotion. Further, he states that for a story to be engaging, the emotional charge must move up and down. Therefore, to create an engaging educational story it must be developed with a narrative that makes the emotional charge vacillate between positive and negative values.

Positive emotional charge can be associated with being happy; in an educational story this can be associated with feelings of accomplishment, gaining new knowledge, building new connections between different areas, discovering new applications, and so forth. Negative emotions in real life lead to being unhappy; in an educational story this can be equated to the anxiety of not knowing, and the fear of failure to understand.

To achieve emotional movement, McKee proposes five stages for designing the "spine" of a story: 1) inciting incident, 2) progressive complications, 3) crisis, 4) climax, and 5) resolution.

Inciting incident is something that gets the story going, that is, the basic problem that the protagonist is attempting to solve. For an educational story, rather than feeding facts, one can start by using the example of a real-life problem, the solution to which lies in understanding the technical aspects of the educational content.

Progressive complications and conflict make the story emotionally charged and interesting throughout, as it implies that every problem that the protagonist solves raises a new problem; McKee calls it the "Law of Conflict." Expanding it he says the storytelling is a "temporal art" like music; and, conflict is as important for good storytelling as sound is for music - just as no sound means no music, no conflict implies no story.

Educational storytelling is also a temporal art, and needs an element of conflict, or progressive complications to keep the learner's emotions fully engaged. To obtain

progressive complications, or conflict in an educational story, every answer given in one part of the story should raise a new question, to be answered in the following story unit.

Crisis is that stage of the story where the protagonist seems to be surrounded by insurmountable problems. Climax is the stage where emotions reach their peak. Crisis and climax stages are certainly required for a good human story; however, it is not easy to include these in every educational story. Nonetheless, any educational story that can include these stages will have greater impact on the learner.

Resolution is where all story problems are resolved. Every educational story needs to have a resolution stage, answering the problem(s) raised within the narrative. Thus, the narrative for an educational story must have at least three stages: inciting incident, progressive complications, and resolution, forming the spine of the story. As the delivery of knowledge advances in an educational story, its narrative should keep moving the emotional charge between positive and negative values. To conclude, e-learning content cannot be effective if we put in only the (dry) knowledge content; some narrative overhead is essential to create an engrossing educational story.

Creating Digital Stories for Innovative e-Learning

Using e-learning content that encourages learners to be creative and innovative requires innovative pedagogy. This innovative pedagogy can be developed by using digital storytelling. These digital stories need to be engaging with a well defined spine, and a moving narrative to keep the learner engaged. McKee Principles can be used to achieve this. However, how to encourage creativity, and inculcate the spirit of innovation through e-learning content, needs further exploring.

As creativity implies gaining some new insight, a good educational story must produce new insights by connecting knowledge from different domains. Similarly the ability to innovate is multiplied by drawing on ideas from different fields. Thus, to develop e-learning content that supports creativity and innovation, it must allow easy amalgamation of knowledge from different areas.

Current e-learning technologies, particularly online systems, can provide a vast amount of information. However, most do not provide good narratives, thus the user gets lost in a maze of disjoint information, and learning outcomes suffer. Also, most e-learning courses focus on one topic at a time. The challenge is to intertwine knowledge from different areas. This is particularly important for ICT courses, as the knowledge of the application domain is as important as programming, database and other computing fundamentals. To create good e-learning stories we need models and tools that support systematic creation of good educational narratives.

Movement Oriented Design

Movement Oriented Design (MOD) is a framework proposed by the author for creating contextualized stories, that is, stories that work in a given context, for example e-learning . MOD views every temporal presentation as a story. From a MOD perspective, even this

article is a story. Every good story should have three clearly identifiable components: a beginning, a middle, and an end; called Begin (B), Middle (M), and End (E) in the MOD terminology.

The most fundamental element of the MOD methodology is a Movement, which is defined as a micro story with clearly identifiable begin, middle, and end components. A good beginning should entice the user, wanting to find out more. The middle should be used to deliver the essential educational content, and the end should conclude the story unit. Wherever possible, the end of one story unit should build a link to the next. A story unit that does not have all three components (B, M, and E) will most likely be ineffective. When creating e-learning content, often the authors overload it with useful information without linking these with an effective narrative; consequently the learners' interest wanes.

Linking movements effectively is the key to producing engaging stories; for example, what's revealed in one movement should raise some more pertinent questions that are answered in the next, so on and so forth. Creating a good e-learning story using MOD implies authoring the entire story as an ensemble of movements, these movements can then be instantiated with digital media elements including text, audio, stills and video.

MOD provides a systematic process to develop an e-learning story starting with just a topic, or an idea. The e-learning story comprises two main parts: knowledge, and narrative. The knowledge part is what we want learners to know after going through the lesson, and the narrative provides the envelope in which we need to deliver this knowledge to make the delivery engaging.

To create e-learning stories that amalgamate two or more knowledge domains — such as accounting, law and database — we need to create separate narratives for each domain and make these narratives intersect at different points. This is akin to intersecting subplots in a movie.

Narrative creation is itself a great learning tool. According to structural anthropologist Claude Lévi-Strauss, our memories are also stored as narratives. Therefore, we should develop e-learning systems that not only provide e-learning content for viewing, but also provide the facility to create new narratives as learning exercises. These narratives, created by the learners, could be submitted as assignments or shared with other learners via Web 2.0 technologies such as blogs and wikis.

E-learning systems that deliver good intertwined narratives for learning, and the facility to recreate new narratives will enhance the flow of creative juices, and encourage the learners to be innovative. Additionally, these will improve the learners' communication skills, vital for operating in the current international markets. Such systems can revitalize the pedagogy of courses, such as engineering and ICT, and help in attracting new cohort of students.

Directions for Further Research

To advance the ideas presented in this paper, further research into technical as well as pedagogical aspects is required. Furthermore, research into the interdependencies between these two aspects will be important for creating e-learning systems that work effectively and provide the opportunity to enhance learning outcomes.

Technical research needs to explore programming models, environments, and user interface designs, to facilitate story creation with the MOD methodology using the following steps:

1. Start with a story Concept, and Brainstorm options for BME components to generate Movements.
2. Generate a Story Plot by choosing well-linked Movements.
3. Create a Storyboard by representing Movements with iconic multimedia elements.
4. Develop the required Set of Content using text, videos, images, graphics, and sound elements.
5. Author the presentation by instantiating the story plot with multimedia components.

Pedagogical research should then focus on testing the efficacy of digital stories as a learning paradigm, with particular focus on the effectiveness of story creation as the learning environment.

CASE:

For developing a course for Hospital Industry in story telling process. The story involved a person who is going for treatment in a hospital. There he finds that patient care were poor. He posted in social media that he is not happy with the patient care in this hospital and he expresses his frustration. On seeing this immediately the other hospital in the same area replies him that there patient care will be good and they can cure the problem very easily with less cost too. He is going to that hospital. He got cured. On his way home he rate this hospital 5 star and gave good feedback about the hospital.

The story set the tone for the course saying that in today's digital age, how a small gesture from a service provider can go a long way in enhancing not only its reputation but ensure repeat footfalls. The course was about various trends and use of technology in the health care industry. Story-based learning was seamlessly interwoven in the teaching process.

The power of storytelling as a pedagogical tool has been recognized from time immemorial, and, in recent times, for e-learning as well. Many educational programs in engineering and information and communication technology (ICT) are facing numerous challenges in attracting and retaining students. The solution to some of these challenges lies in creating innovative programs, with innovative content and pedagogy based on digital storytelling.

Conclusion:

Many engineering and ICT courses are facing the prospect of reduced student enrolments. New pedagogical models are required to revitalize these courses. E-learning systems using digital storytelling can provide this new innovative pedagogy. Storytelling principles articulated by Robert McKee show how to create a good narrative using inciting incident, progressive complications and resolution. MOD provides a framework to create story narratives starting with just a concept. Creativity and innovation are enhanced by combining knowledge from different domains. Therefore, e-learning systems that deliver engaging intertwined narratives for learning, and offer the opportunity to generate new narratives, will provide a learning environment that encourages creativity and innovation.

References

- Bareiss, R. and Singh, S., (2007). Scenario-Based Curriculum Development. http://elc.fhda.edu/dev_workshop/index.html.
- Denning, P. J., and McGettrick, A., (2005). Recentering Computer Science, *Communications of the ACM*, Vol. 48, No. 11, pp.15-19, November 2005.
- Lévi-Strauss, (1995). *C. Myth and Meaning: Cracking the Code of Culture*, Schocken Books, New York.
- McKee, R. (1998). *Story: Substance, Structure, Style and the Principles of Screenwriting*, Methuen.
- Neal, L. (2001). Storytelling at a Distance, *eLearn Magazine*, <http://www.elearnmag.org/subpage.cfm?section=research&article=1-1>
- Newhart R.L. and Joyce, C. (2005). Free radicals of innovation [videorecording], Innovation Center, Star Thrower Distribution.
- Schank, R. (2007). Story-Centered Curriculum (SCC) <http://www.socraticarts.com/about/scc.htm>.
- Sharda (1), N. (2007). Creating Innovative New Media Programs: Need, Challenges, and Development Framework, ACM Workshop on Educational Multimedia and Multimedia Education (in conjunction with ACM Multimedia 2007), September 28, 2007, Augsburg, Germany, pp 77-86.
- Sharda (2), N. (2007). Applying Movement Oriented Design to Create Educational Stories, *International Journal of Learning*, Vol. 13, 2007.
- Sharda (3), N. (2007). Authoring Educational Multimedia Content Using Learning Styles and Story Telling Principles, ACM Workshop on Educational Multimedia and Multimedia Education (in conjunction with ACM Multimedia 2007, 28 September 2007, Augsburg, Germany, pp 93-102.
- Stevens, C.D. (2007). Coming to Insight, Eventually. Screenhub, March, 2007. http://www.screenhub.com.au/news/newsarticle_sendfriend.asp?newsID=14910.