

Strategies for using e-Tools in Teaching, Learning and Supporting of e-Learning Courses: A Selective Study

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Abstract— e-Learning, of late, has been witnessing an unprecedented expansion as an opportunity for higher education. This expanding alternative mode calls for ensuring and imparting a sound and qualitative education. It is not sufficient to use online learning and teaching technologies (lecture notes, printed material, PowerPoint, websites, animation) simply for the delivery of content to students in e-learning courses. The present study made an attempt to provide the strategies for using the new set of e-tools such as Blogs, Podcasting, Wikis and YouTube, in teaching, learning and supporting of e-learning courses within the education. The findings of the study further demonstrate that if the concept of using new set of tools in e-learning is imparted with a better approach and perspective, the reach will be phenomenal. This study reiterates the relevance of imparting new tools for qualitative education through e-learning.

Index Terms—e-learning, e-tools, Blogs, Podcasting, Wiki, YouTube

I. INTRODUCTION

The educational sector has paid particular attention to the potential of technology to facilitate improvement in the quality of teaching, to enable effective teaching and to improve the learning experience. It was observed by several researchers that with the advent of the Internet technology, integration of the Information technology (IT) tools into higher education stream has become an easy task ([1], [2], [6]). In this context, online learning and teaching mode has emerged as a major higher education option before the global student community in general and Arab student population in particular.

Students today have grown up within a world of pervasive technology including mobile phones, digital cameras and the omnipresent internet. Described as, “Gen-X, Millennials, the Nintendo and Net Generation” ([10],[11],[12]), these students blog, play games in immersive 3-D worlds, listen to podcasts, instant message friends, listen to music, author their own video for www.youtube.com and collaborate on the creation of ‘digital stories’ for their ePortfolio. They absorb information quickly, in images and video as well as text, from multiple sources simultaneously. They operate at what in [14] describes as, “twitch speed”, expecting instant responses and feedback. They prefer random “on-demand” access to media; expect to be in constant communication with their friends and ease of access in the creation of their own content.

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The focus of this paper will be on a pragmatic exploration of blogs, YouTube, Podcasting and wikis as illustrative and typical examples of technologies and websites that reflect the changing landscape of e-learning courses. Explored will initially be definitional aspects of these e-tools and a general understanding of these tools before delving into a detailed focus on some possible strategies for educators to incorporate the use of blogs, Podcast, YouTube and wikis student learning experience.

II. A STUDENT CONTEXT

Why would the notion of incorporating user-created videos (e.g. from www.youtube.com) be important within education? From a student perspective we must reflect on the changing nature of the students as key stakeholders in the educational process. Sometimes called “digital natives” or the “Nintendo generation”, these new millennial’s approach work, recreation and certainly education in new ways in [15].

There is some debate about students’ ability to transfer these technological ‘real world’ skills to an academic context. According [8] to an American study on teen content creators and consumers, 57% of online teens create content for the Internet. That amounts to half of all teens ages 12–17, or about 12 million youth. The study referred to students being involved in the following activities: create a blog; create or work on a personal web-page; create or work on a webpage for school, a friend, or an organization; share original content such as artwork, photos, stories, or videos online; or remix content found online into a new creation. In learning [9], these trends are manifest in what is sometimes called “learner-centered” or “student-centered” design. This is however, more than an adaptation to accommodate different learning styles or allowing the user to change the display of a website; it is the placing of the control of learning experience itself into the hands of the learner. The use of the e-tools in e-learning courses provides for students an unprecedented way to access, socialize and co-create.

III. WHAT IS BLOG?

According to [12], blog refers to the term a log of the Web – or Weblog. A Weblog or blog can be described as an online journal with one or many contributors. The word blog is both a noun and a verb. In simple definition it is a Website with dated entries, presented in reverse chronological order and published on the Internet. People who maintain a blog are called bloggers.



The act of posting to a blog is called blogging and the distributed, collective, and interlinked world of blogging is the blogosphere. Phlog (also known as photo log) is a collection of photos, pictures and/or images posted by bloggers to the blog for the world to see.

A. Characteristics of a blog

Blogs differ from traditional websites and provide many advantages over traditional sites, including:

- blogs are novice's Web authoring tool because easy creation of new pages, since new data is entered into a blog usually through a simple form and then submitted with the blogger updating the blog with little or no technical background ;
- most blog platforms allow the blog administrator to invite and add other authors, whose permissions for creating content and access are easily managed;
- filtering of content for various blog entries, for example by date, category, author, or one of many other attributes;
- providing a personal writing space that is easy to use, sharable, and automatically archived;
- ability to link and inter-link to form learning communities;
- opportunity to serve as a digital portfolios of students' assignments and achievements;

B. Educational benefits of blogs

According to [15], the potential benefits of Blogs for Class rooms include the following:

- creative and associational thinking in relation to blogs being used as a brainstorming tool and also as a resource for interlinking, commenting on interlinked ideas;
- can promote critical and analytical thinking;
- can promote creative, intuitive and associational thinking;
- potential for increased access and exposure to quality information;
- combination of solitary and social interaction

The growing popularity of blogs suggests the possibility that some of the work that students need to do in order to read well, respond critically, and write vigorously, might be accomplished under circumstances dramatically different from those currently utilized in education.

C. Strategies for using blogs in teaching and learning

The following are some possible uses of blogs in education:

1) Within a pedagogical perspective a blog can support;

- comments based on content, literature readings and student responses;
- a collaborative space for students to act as reviewers for course-related materials;
- an online gallery space for review of works, writings, etc., in progress, making use especially of the commenting feature;
- teachers encouraging reactions, reflections and ideas by commenting on their students' blogs, and
- the development of a student portfolio of work

2) Within a personal academic perspective a blog can support;

- reflection on teaching experiences;
- categorized descriptions of resources and methodologies for teaching;
- illustration of specific technology-related tips for other colleagues

3) Within an organizational perspective a blog can support;

- A common online presence for unit-related information such as calendars, events, assignments etc. and
- Online area for students to post contact details and queries relating to assessment.

IV. WHAT IS PODCASTING?

Podcasting is comprised of either audio or video MP3/MP4 recordings that can be downloaded directly to the desktop computer as well as to various mobile devices. A podcast does include digital audio files hosted on the Internet, but it also involves another special file called a FEED which is also hosted on the Internet. This file has a particular format which can be read by the podcast aggregating software and it is this file that allows podcast listeners to SUBSCRIBE to a podcast. Podcast listeners can use any device capable of downloading and playing the digital media including iPods, some mobile phones and most commonly a PC.

A. Characteristics of Podcasting

The components involved delivering and receiving a podcast (e.g. Fig.1) is described more detail below:

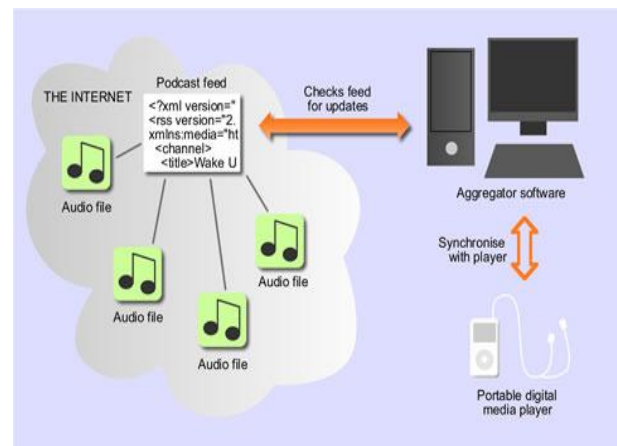


Fig.1. Components of Podcasting

- Digital audio file - A podcast will involve a number of digital audio files hosted on the Internet. Each podcast episode is represented by one of these files. In general these are audio files encoded in a standard format such as MP3 so that they can be played on the majority of digital media players and PCs.
- Podcast feed - This is a simple file which basically consists of a list of the podcast episodes with some additional descriptive information called metadata. This metadata provides details of the podcast and also details for each episode which helps a listener decide whether to subscribe to the podcast and then which episodes to listen to.

- Feeds are generally automatically generated and written in code called XML conforming to a standard such as RSS (Really Simple Syndication).
- Podcast aggregator software - This is PC based software that provides specific functionality for subscribing to and receiving existing podcasts. There are many software packages that provide this functionality most of which are free e.g. iTunes & Juice.
- Portable digital media player - a small electronic device that stores and plays audio files. The most well known example is the iPod but there are many others such as Sony Walkman, iRiver and Creative Zen. In addition many modern mobile phones can receive and play podcasts.

B. Educational benefits of Podcasting

Podcasting is being utilised not only to provide a repeat or summary of a lecture given but also to provide timely academic material such as law-related news to students. Such usages could create the relationship that is based on continuous communication and interaction between teachers and students by having students engage in academic debate and in accessing timely academic research.

Podcast allows for diverse choices and preferences in usage for information gathering and dissemination. Universities are recognising this potential and utilise podcasting to improve the effectiveness of communication to broadcast news and provide timely information. Of special note is the innovative use as a sensory aid support mechanism, providing ways to help students who are dyslexic.

By making university news, research work and a university/library tour publicly available, podcasting acts as a marketing delivery mechanism. This is a powerful tool as it increases customer retention through one-to one marketing systems ([4]).

The process of podcasting has been documented by technology/media support departments at various universities. It is based on the belief that use of any technology may help in teaching about podcasting, for use by teachers.

There are many possible uses to which podcasts can be put to support and encourage teaching and learning. Some examples include:

1) Involving podcasts created by staff:

- Recorded face-to-face teaching sessions
- Interviews with subject experts
- Quotes from recorded speeches
- Answers to posted questions
- General feedback on assignments
- Reviews of subject related journal articles
- Subject specific news and course notices
- Recordings of meetings, conference presentations and keynotes
- Audio reference resources e.g. recordings of the sound of heart conditions for medical students

2) Involving podcasts created by students:

- Portfolio submissions
- Placement log
- Conducting interviews with subject experts
- Reviews of selected research journal articles

C. Strategies for using Podcasting in teaching and learning

The most common and obvious use of podcasts are to provide recordings of face-to-face teaching sessions. These are some guidelines to the use of Podcasting in learning and teaching:

- Choose a specific focused topic that can be covered in a period of 5-10 minutes and is something that students will perceive as important.
- Integrate the podcast into the course to encourage the students to use it (e.g. review important topics for exam revision). If podcasts are provided as optional extras then it is likely that many will not listen to them.
- Don't worry about covering a topic comprehensively in a podcast. It is more appropriate to provide an introduction or overview and use other types of resources and delivery mechanisms to provide the detail.
- Structure each podcast episode to include an introduction, content and conclusion.
- Encourage the listener to be active by asking thought provoking questions and incorporating pauses into the podcast.
- Write out a set of notes or even a script to avoid too many pauses and mistakes in your recording. This can then be used to provide an alternative version for the hard of hearing

V. WHAT IS WIKI?

A wiki is a group of Web pages that allows users to add content, similar to a discussion forum or blog, but also permits others to edit the content ([3]). The main difference between Wiki and blog is that there is no inherent structure hard-coded: wiki pages can be interconnected and organized as required. the wiki offers a vast simplification of the process of creating HTML pages, and thus is a very effective way to build and exchange information through collaborative effort.

A. Characteristics of a Wiki

The following are some typical characteristics of a Wiki:

- they involve the creation of documents (individual pages as well as the entire wiki) without a detailed technical knowledge of HTML;
- where a blog is (usually) the writings of one person to be read by many, a wiki is a website that allows a user to add content, but also allows that content to be edited by any other user;
- they tend towards expressing ideas as relationships between pages, thus creating a network of interrelated topics;
- they are a-temporal, that is, the nodes (or interlinking textual references) change not according to time but by way of development within the evolving and edited text,
- they track the changes to individual pages over time.

B. Educational benefits of Wiki

Using wikis, students can easily create simple Websites without prior knowledge or skill programming in HTML or current software used for



Website authoring, thus eliminating the time overhead necessary to develop these skills. A wiki also offers the ability to interact with an evolving document over time.

It allows teachers and learners to see the evolution of a written task, and to continually comment on it, rather than offering comments only on the final draft. Considering students' busy schedules, a wiki can also be very useful for tracking and streamlining group projects.

C. Strategies for using Wiki in teaching and learning

The following are some possible educational uses of a wiki:

- wikis can be used as a knowledge base for teachers, enabling them to share reflections and thoughts regarding teaching practices and allowing for versioning and documentation;
- wikis can be used to map concepts: they are useful for brainstorming, and authoring a wiki on a given topic produces a linked network of resources;
- students can use a wiki to develop research projects, with the wiki acting as ongoing documentation of their work;
- a wiki can be used for students to add summaries of their thoughts from the prescribed readings, building a collaborative annotated bibliography;
- in distance learning environments, the tutor can publish course resources like syllabus and handouts, and students can edit and comment on these directly;
- a wiki can be used to facilitate a presentation in place of conventional software, like Keynote and PowerPoint;
- wikis are being used for course evaluation:

For a further exploration of some of these ideas, also see ([7], [13], [17]).

VI. WHAT IS YOUTUBE?

YouTube is a popular video sharing website where users can upload, view, and share video clips.

D. Characteristics of YouTube

A typical YouTube webpage is usually made up of the following components:

- the wide variety of video content including movie and TV clips and music videos, amateur content such as video blogging and short original videos;
- unregistered users can watch most videos on the site; registered users have the ability to upload an unlimited number of videos;
- Flag – ability to indicate a video that has inappropriate content;
- Title - main title of the video;
- Tags – keywords specified by the person who has uploaded the video;
- Channels – relating to groupings of content;
- Related videos - determined by the title and tags, appear to the right of the video;
- Subscribe – registered users can subscribe to content feeds for a particular user or users;
- Comments – often not monitored can be provided by any registered user about a video uploaded;
- Views – the number of times a video has been watched;
- Rating - videos can be rated by registered users

E. Educational benefits of YouTube

Video can be a powerful educational and motivational tool. Effective instructional video is not television-to-student instruction but rather teacher-to student instruction, with video as a vehicle for discovery. However, a great deal of the medium's power lies not in itself but in how it is used.

According to [5], considering the appropriate use of any media to improve learning suggest that media must;

- be aligned with expected learning or performance outcome;
- reduce cognitive load;
- exclude superficial text or graphics;
- be appropriate for target learner's learning literacy's

YouTube is increasingly being used by educators as a pedagogic resource for everything from newsworthy events from around the world to "slice-of-life" videos used to teach students.

F. Strategies for using YouTube in teaching and learning

Video learning shouldn't be passive. These are some guidelines relating to the specific use of video to promote active viewing and maximize learning;

- SEGEMENT - allow your students to watch the video in short segments
- NOTES - videos are ideal for developing note-taking skills. Take notes on the first viewing, then rewind, replay and check them. This can be done individually or collectively as a class discussion / brainstorming session.
- PAUSE - Use the "pause" feature to temporarily stop the tape and allow your students to try to predict/recall what will happen next.
- SOUND OFF - for video sequences that rely on visuals, turn the sound off and narrate. This technique works especially well for listing the steps of a process.
- PICTURE OFF - use the audio clues to describe what is on screen. Compare and contrast the predictions with the actual video.
- PREVIEW each video carefully to determine its suitability for the lesson's objectives and student's learning outcomes.
- INTEGRATE - the video into the overall learning experience by adding an experimental component to the lesson. Activities can be done prior to viewing; to set the stage, review, provide background information, identify new vocabulary words, or to introduce the topic.
- CUT – use online video editors like www.cuts.com or www.eyespot.com to capture the concepts that are most relevant for your lesson topic.
- FOCUS - give students a specific responsibility while viewing. Introduce the video with a question, things to look for, unfamiliar vocabulary, or an activity that will make the program's content more clear or meaningful.

When students have viewed the video consider; what interested them? What didn't they understand? How can you relate the program to their experiences and feelings? Ask the students to add comments / blog on the video.

How can you validate and appreciate diverse reactions to the material?

Coupled with hands-on learning, a new media, video-enhanced curriculum can be invaluable for expanding the learning experience and by incorporating a medium that is as popular, forceful and familiar; educators can tap into the existing enthusiasm towards this form of new media.

VII. CONCLUSION

The learning design and content elements that form a learning ecology must be dynamic and interdependent. The learning environment should enable instructional elements designed as small, highly relevant content objects to be dynamically reorganized into a variety of pedagogical models. This dynamic reorganization of content into different pedagogical models can create a learning system adaptive to varying student needs. Imagine for example, what could happen if our education curriculum operated more like YouTube, Blogs, Podcasting and Wikipedia, allowing for the rapid deployment of scattered expertise and the dynamic reconfiguration of content across contexts.

Which tools are used by learners and teachers, and whether such tools will be used at all, will always depend on the specific pedagogical needs of a teaching situation. Common to all of these technologies is that they are strongly social and community based. The Blogosphere offers ongoing distributed expression of and interaction with personal news, views, and ideas. YouTube's popularity and authentic slice-of-life offers creative opportunities to share; respond to and author content. Wikis emphasise a more task-oriented collaborative editing of content and development of "collective" interlinked knowledge.

Educational podcasting usage has three perspectives that assist us in explaining the current adoption status. Firstly, the perspective of lecturers; podcasting enables direct communication and interaction with students which go beyond the temporal and spatial limitations of conventional face-to-face education. Podcasting provides lecturers with the facility to emphasise the information, which they feel to be critical for the students, thus augmenting the teaching material. The second perspective is that of the student's. Secondly, the flexibility and affordability of podcasting cater to diverse student's needs by enabling repeated learning and offering an opportunity for the effective use of time. Finally, from the University's perspective, podcasting is a communication enabler, reaching out to a wider community.

Blogs, Podcasting, YouTube and wikis provide a means to encourage and make visible the social construction of knowledge which such theory postulates, and it is incumbent on teachers to embrace such tools where their use is beneficial to learners and teachers alike.

All these e-tools may be used in development of e-learning courses not only for creation of a knowledge database but also for sharing of experience.

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