

# Conceptual Design of EduFeedr — an Educationally Enhanced Mash-up Tool for Agora Courses

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**Abstract.** The use of blogs in online courses has become increasingly popular. Current RSS feed readers lack special features to monitor the process of collaborative knowledge building in these agora type of courses. In this paper we present the conceptual design of an educationally enhanced feed reader and mash-up tool that is work-in-progress.

**Keywords:** mash-up learning environments, feed readers, scenario-based design

## 1 Introduction

Increasing number of educational institutions are making their courses openly available in the Web. However, open course could be a confusing term because openness can have several meanings: open access to static content such as in MIT OpenCourseWare, use of an open learning environment based on Web 2.0 tools or a course in traditional LMS with an open registration. In this paper we are focusing on specific kind of open courses that share all of the following three criteria: (1) openly accessible content, (2) open personal learning environment, and (3) free and open registration for participation. We propose to use a new term — agora course — while referring to courses of this kind. Agora is a Greek word for a place for assembly or an ancient marketplace.

In spring 2008 the author of this paper was teaching an agora course in University of Art and Design Helsinki. On that course Wikiversity was used as a central component of the learning environment [1]. Other tools that were used in the course contained teachers' blog in Wordpress.com, students' blogs on various blogging platforms, social bookmarking service (Delicious) and Web 2.0 environments for sharing content that was created by the participants (LeMill<sup>1</sup>, photo sharing websites, podcast hosting websites and video sharing websites). The course started with more than 50 participants who signed up on a wiki page. Number of people who sign up for the open course may grow rapidly if the course receives attention in the blogosphere. For instance, more than 1200 people signed up for an open course Connectivism and Connective Knowledge in summer 2008 [2].

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<sup>1</sup> LeMill. <http://lemill.net>

While setting up a course wiki (e.g. at the Wikiversity portal) is a simple task, it does not cover all the functionalities needed for smooth and effortless management of teaching and learning activities. This paper addresses the challenges of designing one of the central components of a mash-up personal learning environment for agora courses: an educationally enhanced mash-up tool that supports planning, monitoring and analyzing learning activities which cross the borders of different Web 2.0 applications.

## **2 Aggregating News Feeds in Mash-up Learning Environments**

Large number of participants who all post in their personal blogs (which, in most cases, are using different hosting providers and blog software) and use various Web 2.0 environments for other type of content creates a challenge for a facilitator: how to reduce the overhead work while trying to follow the activities that take place on the course and to provide feedback for all the participants.

Currently the authors have used Pageflakes online feed reader for creating shared pages that display all the blog posts and comments. These pages are useful to get a quick overview but the recent changes are not specially emphasized. Therefore a standard desktop RSS reader was also used. During these courses it came out that standard feed readers lack several features that would be important for online courses. For example in RSS readers typically new posts are emphasized, but in a course with many participants it is equally important to notice when somebody is left behind. It is also important for the facilitator to see in one glance the "big picture" of the activities taking place on the course, especially the feedback given by one student to another (in order to monitor the intensity of collaborative knowledge building). These special features have been always present in traditional learning management systems, but if we want to keep our agora courses as open as possible, we should allow our students to use their own personal learning environments.

There have been some studies and developments in the similar direction such as MUPPLE [3], simple aggregating mash-up The Wire [4] and knowledge discovery application PALADIN [5], but none of these are addressing exactly the needs.

## **3 Conceptual Design of EduFeedr**

Our study is based on the design-based research methodology [6], involving iterative scenario-based design [7] and lightweight prototyping [8].

In order to clarify the design requirements a lightweight prototype was built using Bento personal database application for Mac OS X. All the blog posts and comments that were written by the participants were stored in Bento database in webarchive format. It was possible to browse posts and comments by the participant, write short notes about the blog posts and add ratings. The prototype was used in a course that had quite detailed assessment scheme. Final scores for all the students were calculated automatically based on the ratings. Some students decided to delete their blogs soon after the course was over. Complete archive of course discussions was still available

in the database. The main limitation of Bento database was lack of RSS reader. All the blog posts had to be saved manually. Because of these limitations it was decided to design an online tool that would function both as a feed reader and database for managing course discussions.

This new tool called EduFeedr had the following initial design requirements: (1) it should aggregate information from all major blogging platforms using open standards (RSS, Atom, trackback, pingback); (2) it should not require any special plug-in on the student blogs; (3) the scope of EduFeedr is limited with aggregating and annotating the feeds from both teacher's and students' PLE's and visualizing the process of knowledge building; (4) only teacher has an user account in EduFeedr, which allows her to modify the EduFeedr settings; (5) anyone has read access to aggregated course content.

In the second iteration of the design we wrote a set of scenarios that describe the main features of EduFeedr. Six scenarios covered typical use cases such as setting up the course, writing a blog post, browsing the blog posts, writing comments and archiving the course. The scenarios were published in a wiki where other people were able to post their comments<sup>2</sup>. An example scenario is presented in figure 1.

John has been using EduFeedr for a few weeks. For him the most exiting feature is the way how connections between the blogs are presented. EduFeedr has a visualization where all the blogs are displayed as nodes. Lines between the nodes show the links between the blog posts. All the students have linked to the course blog. Some of the student blogs have a lot of connections while others have not been so active.

It is possible to switch on a different view and see who has commented which blog. This time John finds out that some student blogs have actually more comments than his blog.

The same information is also displayed as a table where it is easy to see how many pingbacks and comments each participant has made. EduFeedr has also aggregated all the comments. It means that John can see all comments that one student has made on a same page without visiting all the blogs. This will save him a lot of time, because commenting is part of his grading scheme and students get points for that.

**Fig. 1.** Example scenario: Exploring the connections between student blogs

In order to start using the EduFeedr a course must be created by the teacher. The students can use any blogging platform that they like. It is suggested to create a new category for course related blog posts or a special blog for the course. Instead of adding their blog addresses to the wiki page the students will submit their blogs on the course page in EduFeedr. The facilitator can also specify tags that have a specific meaning. For example it is possible to make all blog posts with a tag "urgent" to stand out in the feed.

One of the complicated aspects of blog-based courses is connecting students' blog posts with the assignments. One approach is to connect blog posts with assignments by the date when the post was published. This does not require any special input from the student but unfortunately it would work only when all students submit their posts in time. Another approach is to agree a special tag for each assignment. Our experience with using tags shows that it is quite common to misspell or leave out the tag. In EduFeedr scenarios we decided to use a third approach. Students are asked to

<sup>2</sup> EduFeedr scenarios. [https://wiki.mozilla.org/EduFeedr\\_Blueprint](https://wiki.mozilla.org/EduFeedr_Blueprint)

include a link to the original assignment in their blog post. This is a common blogging practice to refer to another blog. Course blog will receive a notification comment using trackback or pingback method. EduFeedr can connect assignments with blog posts based on these notifications. This approach has also some limitations. Blogger blogging platform do not send trackback or pingback notifications to other blogs. That can be solved by parsing all student blogs with Trackback 'em All script<sup>3</sup>.

#### 4 Conclusions and Future Work

This paper described the work that is still in progress. The next step is to choose a suitable open source platform to be used for developing and validating EduFeedr prototype. Potential candidates are POSH<sup>4</sup>, rawdog<sup>5</sup> and Tornado<sup>6</sup>.

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<sup>3</sup> Trackback 'em All. <http://scott.yang.id.au/code/trackback-em-all/>

<sup>4</sup> POSH. <http://sourceforge.net/projects/posh/>

<sup>5</sup> rawdog. <http://offog.org/code/rawdog.html>

<sup>6</sup> Tornado. <http://www.tornadoweb.org>