Places to Go: Connectivism & Connective Knowledge

by Stephen Downes

In the years of writing about Web sites for this publication and for its predecessor, *Technology Source*, I have resisted reviewing sites in which I have been directly involved. This issue, however, I will make an exception in order to introduce the reader to the Connectivism & Connective Knowledge online course that is offered through the Learning Technologies Centre and Extended Education at the University of Manitoba by George Siemens and me. The course is part of the program leading to the Certificate in Adult and Continuing Education (CACE).

The design and content of this course captures some trends that have emerged in recent years in the field of online learning. As suggested by the concept I have called "e-learning 2.0" (Downes 2005), online course offerings should move away from large, centralized applications and instead make use of a network of connected applications. Connectivism & Connective Knowledge is not simply about the use of networks of diverse technologies; it *is* a network of diverse technologies. One participant in the course captured the network-like structure of the course in a diagram that shows how the different elements and various technologies are linked together (Figure 1). Each of the elements described in this review has some place in this image.
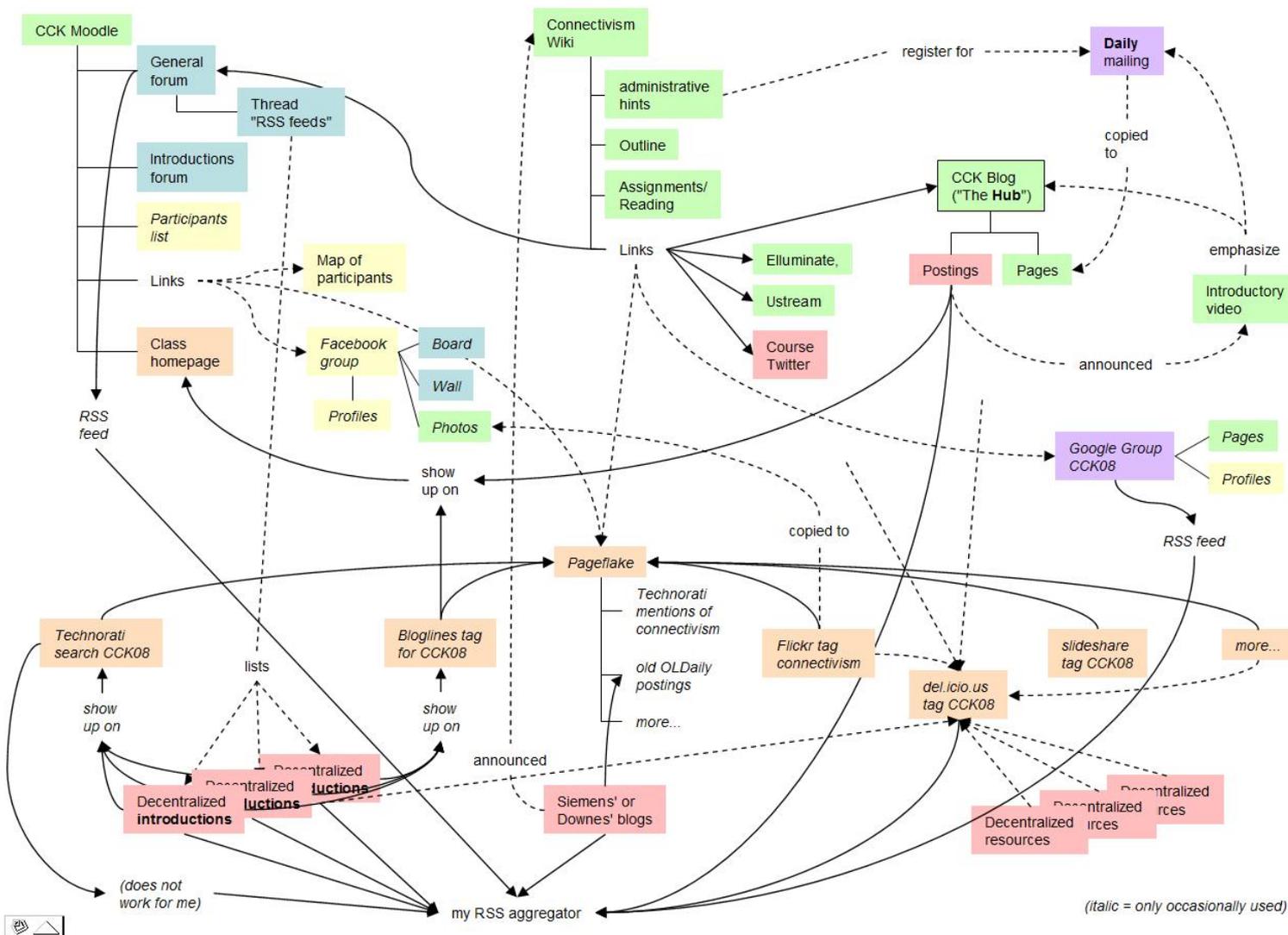
Figure 1. CCK08: A connectivist course structure

Paid enrollment in the course has been capped at 25 students. Participation in the course, however, is not limited to registered students; others may sign up as non-credit students for free. As of this writing, roughly 2200 participants have enrolled and are taking part in the course. Because of its size, Connectivism & Connective Knowledge is being called a massive open online course (Open Education Partnership 2008). It is not the first large course offered on the Internet; indeed, large enrollment courses have been offered frequently enough to have spawned a set of best practices. Nor is it the first open course offered for credit online; David Wiley offered his Introduction to Open Education in the form of a wiki in 2007. What makes this course unique is the combination of these elements: its large size, its openness, and its for-credit status.

Additionally, Connectivism & Connective Knowledge is the first course explicitly designed according to the principles of connectivism. Coined by George Siemens (2004) and expanded upon in his book *Knowing Knowledge*, the term connectivism describes a form of knowledge and a pedagogy based on the idea that knowledge is distributed across a network of connections and that learning consists of the ability to construct and traverse those networks. As I write, "This implies a pedagogy that (a) seeks to describe 'successful' networks (as identified by their properties, which I have characterized as diversity, autonomy, openness, and connectivity) and (b) seeks to describe the practices that lead to such networks, both in the individual and in society" (Downes 2007, ¶7).

Although the course Weblog is touted as "Home," probably the best place to begin with Connectivism & Connective Knowledge is the course wiki. Here you can see the structure of the course, which is being offered over 12 weeks, beginning on September 9, 2008. The wiki links to readings for each of these twelve weeks along with resources, activities, and assignments. Each week begins with a presentation by the course authors that is offered as an online video, audio, or document. On Wednesdays, Elluminate conference sessions are held that include guest speakers and student participation. On Fridays, the instructors take part in a Skype conversation moderated by EdTechTalk host Dave Cormier and broadcast to the Web using UStream.

In addition to the wiki, student discussion is being encouraged in a variety of venues. A Moodle space has been set up for the course, and while the course management features are not being used, the discussion boards have been opened up to student participation. The course blog has been the location of additional discussion. Students are encouraged to post commentary in their own blogs or content management systems and tag these contributions with "cck08." Some resources with these tags are being aggregated in a PageFlakes aggregator.

Because the course is so distributed, there is a danger of participants getting lost. Keeping everyone on track is the task of the course newsletter *The Daily*. The newsletter is delivered by e-mail and RSS to registered students every weekday and can be viewed as a Web page by anyone on the Internet. *The Daily* is created using gRSShopper, an open-source personal learning application I developed. gRSShopper also acts as a resource aggregator, gathering posts written by students on their own blogs or content management systems and including them as part of the newsletter. Students can use the comment facility as yet another locus of discussion.

Rounding out the discussion options are the course mailing list and the Twitter profile. The mailing list, offered via Google Groups, has hosted a relatively low-volume discussion involving 280 people. Twitter, meanwhile, is a hosted application that allows users to send very short messages—no more than 140 characters—to a group of "followers." Twitter messages are sent to the Web site, to mobile phones, or to readers directly via e-mail or RSS. Our combined Twitter profile allows readers to follow both me and George Siemens along with a combined cck08 account.

Readers can also visit the Twitter Web site and search the combined messages of every user. Twitter users can attach a hash character ("#") to a search string to create a custom search; this is called a "hashtag." By

including a hashtag, like "#cck08," in a Twitter message, senders can ensure that it will show up in a customized search for that tag, allowing anyone to follow the course's Twitter activity. (Need to know more about Twitter? CommonCraft has produced a Twitter in Plain English video, and EDUCAUSE has published a useful article detailing "Seven Things You Need to Know About Twitter." Wild Apricot, a community resource site, provides an introduction to hashtags.)

As can be seen from this description, the course has been designed to be decentralized. While in a typical course, it is expected that students will have the same experiences, read the same articles, and meet in the same place at the same time, the emphasis in this course is on diversity. While students started the course with great enthusiasm, the instructors have been telling them *not* to read everything on every site. In part, this is because there is simply too much to be read. One issue of The Daily can include links to dozens of blog posts.

More importantly, connectivism, as a theory, focuses on autonomy and diversity in networks. It is through the interaction of different sets of perspectives that a community can arrive at new knowledge. As James Surowiecki, author of *The Wisdom of Crowds*, argues in a podcast for Research Talk, "Diversity expands the range of information that a group has available to it . . . . much of the time, groups don't necessarily know in advance what tools or perspectives are really going to be valuable in solving a problem" (Surowiecki and Warren 2006). Encouraging participants to make their own choices about what they read helps them develop unique perspectives that they can bring to the conversation.

What has been most interesting from a design perspective is how the open structure of the course has enabled students to manage their own participation. Right from the beginning days of planning and discussion, it became evident that students could and would set up their own course sessions and their own course facilities. One of the first of these was the Google Map that allows students from around the world to indicate their location. Though a simple application, the map has been widely popular. And for those who do not know how to participate, another student has set up a video introduction embedded in a blog post tagged with the "cck08" designator and highlighted in *The Daily* so that all participants can find it easily.

In other venues, the Chilbo Community in *Second Life* has set up a cohort inside the 3D community application and created an entry on its own wiki page to facilitate participation. The group also set up its own Google Group and Twitter tag. A Connectivism community has been established within Chilbo, and members are meeting to discuss the course on a regular basis (Figure 2).

Figure 2. Connectivism Village in Chilbo

Students have also taken the course to social networks. The Connectivism page in Twine, for example, has 98 members adding links and resources (and conversing in yet another discussion area). The Connectivism Facebook group is more popular, with 318 members as of this writing and an active discussion board.

Students have taken translation into their own hands as well. The Connectivitas, for example, is a Spanish-language connectivist course group formed on grou.ps. The Connectivitas has its own PageFlakes page and Twitter feed for the course. Italian speakers also have a group of their own, and a group has been set up to facilitate translations into Hungarian. There are many more student-directed activities associated with the course; it would be difficult to keep track of them all.

In addition, students have created a range of resources, including Wordle diagrams. These are images produced by a program that scans a page of text and displays key words sized according to their importance. Some students compared wordles for different parts of the course, such as this post comparing a wordle generated from the course blog with one for the Facebook site. Tom Whyte is using a Flickr photostream to display a series of wordles that track changes in emphasis as the course progresses. Students have also produced concept maps, network diagrams, images, and more.

And students have been participating in person. There have been sessions at conferences (such the F-Alt session at Alt-C in Britain), local meet-ups, and a "Synchronous Sunday" where a group of students used WebEx to conduct a live online conversation about the course.

It may be argued that none of this is unique to this course, and of course, it isn't. But a new model of learning has crystallized in the offering of this course, one that may resonate across future offerings. As George Siemens commented in a recent conversation with me that what MIT has done for course content with OpenCourseWare, we have done for course delivery with CCK08. No longer is course delivery the sole provenance of the institution. With a bit of a spark, with social networks and online media, with free applications and the contributions of everyone involved, a community can create and host its own course.

And what of accreditation? The students in the University of Manitoba program are completing assignments for grading by the instructor. Meanwhile, another student in another country asked whether she could take the course for credit at her own institution with the grading conducted by her own instructors. There is no reason for a university to host a course by itself, not when the entire community is doing it for them.

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