

Reward structures for participation and contribution in K-12 OER Communities

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Abstract. Much of the promise in Open Educational Resource (OER) communities is the sharing of educational content, learning activities, and experiences in their design and usage. Achieving a critical mass of relevant quality content that will in turn attract a sustainable volume of users is the single largest obstacle to the launch of an OER community. This paper looks at participation structures and their potential application in the development of eVrest, an OER community for the K-12 minority francophone schools in Canada.

Keywords: Open educational resources, Wiki, communities of practice, minority language schools, learning objects

1 Introduction

Écoles virtuelles, ressources éducatifs, et stratégies en téléapprentissage (eVrest) is a one year knowledge exchange project to encourage the sharing of resources and on-line education know-how among the francophone minority school boards across Canada. Funded in part by the Canada Council on Learning, eVrest brings together 15 partners from across Canada in hopes of establishing a sustainable community of practice. In addition to regular meetings and joint productions, eVrest is developing a community wiki (www.evrest.ca) for on-going collaboration and exchange of resources.

Many of the eVrest partners have developed their own on-line courses using course management systems that confine content in secure course spaces. A challenge for the eVrest community is to encourage provincial education ministries, school boards and teachers to move their material to the more accessible wiki. We also see the potential for the wiki to expand into regional subsections and to have teachers and learners begin to make contributions. The goal of this paper is to examine the participants in the eVrest communities and suggest a number of structures for participation. Ultimately, to be sustainable, the communities need to become self-governing and the

rewards intrinsic for both learners and teachers.

2 Wikis, Content, Community and Sustainability

Leuf and Cunningham [1] define a Wiki as a "software tool that promotes and mediates discussion and joint working between different users". The most popular wiki community is probably Wikipedia (www.wikipedia.org), a massive on-line encyclopedia developed entirely by voluntary user contributions. Wikis can be set up by any person or organization by downloading and installing one of the many wiki software tools and then inviting contributors to participate. However building content is not as easy as installing the software. Even with Wikipedia fewer than 5% of the hits are related to making contributions of content. In part this is blamed on the learning curve for the wiki editing tools, on the time requirements to make a good posting, or on the motivations for doing so. Hong [2] analyzed postings of users and noted the difference between propensity to post and actual frequency of postings. Even those who say they would like to post do not always find time to do so. A key factor in making contributions is the importance of building reputation and being part of a community. Thus, building content in a wiki is closely aligned with building the community itself. A successful wiki, one that has ongoing development and renewal from community contributions, can be a key sustaining factor for a virtual community that otherwise might not coalesce.

Although we have identified common goals and brought key stakeholders in the eVrest community together, they remain separated by their geopolitical mandates. They have much to gain by sharing, yet they are often organizationally stymied in attempts to formally do so. A wiki, with its open contribution approach and inherent informality offers an opportunity for contributions to be shared by individual members of the community, whether as individuals or on behalf of the formal organizations they represent. Over time, as the collection grows and organizations begin to derive more and more benefit, it is hoped that formal barriers to cooperation may relax.

2.1 Initial Features of eVrest wiki

The eVrest wiki is in a on-going state of evolution. In its current incarnation the eVrest wiki has three main sections:

1. a collaborative authoring space for the eVrest project members, including for example, a workspace for collaborative authoring of a monograph on on-line education,
2. the Bibliothèque Virtuelle which is a collection of teacher-recommended links to a wide variety of on-line resources of interest to teachers in the preparation of their courses. In actuality the library has become a meta-library also pointing to similar collections of links held by various partners, and to learning object search engines that will help locate on-line content and learning activities.

3. a collection of member-contributed learning resources to support on-line learning.

In the long run, it is this third content area that will attract and benefit learners, in particular because there is a shortage of appropriate French language content for minority contexts where vocabulary and fluency lag that of comparable students in majority language contexts [3]. However, much community development remains to be done to stimulate contributions to the wiki and create a critical mass of useful content.

2.2 The participation curve

In his Power Law of Participation, Mayfield [4] has nicely captured a progression of contribution and involvement in social networking sites. He notes that within a wiki or other social networking community there is a continuum of twelve actions distributed along a logarithmic “power law” that represent a transition from “collective intelligence” to “collaborative intelligence”. The most popular action, reading, requires the lowest level of engagement. The least common action, leading, requires the highest level of engagement. The twelve actions are:

- Read,
- Mark as favourite, Tag, Comment
- Subscribe, Share, Network
- Write
- Refactor, Collaborate, Moderate, Lead

The participation curve might seem to suggest that without leadership a wiki might not survive. It is interesting to look at this list in the context of other successful sharing sites such as Flickr (www.flickr.com) where there really is not much upper level of involvement. Images are contributed and tagged by folksonomy, others are free to add comments and to subscribe and share, but because the content is predefined as digital stills, we do not see the same opportunity nor necessity for higher levels of intellectual engagement. For contributors, Flickr offers a tool for storing and managing thousands of digital images. For some it also offers a way of sharing those images. Flickr offers “Groups” as opportunities for curating collections or collaborating, but these lack the intensity of editing a Wikipedia entry. It is easy to create content with a digital camera, it is more difficult to create a definitive encyclopedia entry and few are willing to undertake the task of monitoring and editing sections on an on-going basis [5]. Leadership may be important for community quality in Wikipedia, but it is less important for Flickr where quality seems to concern not violating the community standards of decency and privacy.

In summary, the purpose of the community and the nature of its artifacts determine the features and tool set of the sharing site. In turn, the ease with which those tools facilitate the authentic tasks of the users, the lower the technical barriers to participation, and the more likely users will embark. However it is doubtful that users will embark on a non-authentic task just because someone builds a tool that makes something obscure or inane easy to do. In the case of eVrest, organizations want to share educational content among francophone schoolboards in order to increase the

amount of material available and to decrease costs. Teachers want to find new on-line resources, and ideas for planning lessons. Eventually, classroom learners will look for course readings and learning activities that are clearly written at their level of French understanding. None of these are possible without a clear strategy to attract and manage users, contributors and content.

2.3 Tagging

A folksonomy is “a user-generated taxonomy used to categorize and retrieve web content ... using open-ended labels called tags” [6]. As natural language and non-specialist language is easier for lay users to use than structured taxonomies, meta-tagging has become more popular with folksonomies than with taxonomies and generates up to 70% more terms [7]. Although the additional terms may be present, their use is idiosyncratic and folksonomic tagging tends to be less precise and less complete and therefore less efficient than tagging by experts. In eVrest we see the need to use both approaches – have defined fields for grade and subject area and allow open tags as well. The text of the wiki can also be freely searched, but search can be more appropriate if the materials have some basic descriptors of subject, grade level and reading level. For the subject and intended grade level, the schema used by the European SchoolNet for mapping between countries and across languages seems appropriate. However the development of an automatic readability indexing of wiki submissions is foreseen as a useful guide for both users and contributors

2.4 Sharing Links

Wiley’s [8] Send2Wiki is a tool for lowering the effort required for content collection. Send2Wiki is installed on the browser and it permits a reader to highlight a web page segment and transmit that content to a wiki page. Send2Wiki also affords comments, and tags and machine translation. Unfortunately it does not clear copyright of the material, so its use in an institutional environment would be limited to web content that was clearly licensed for reuse. To extend and encourage the suggestion of useful links to eVrest’s bibliothèque virtuelle a similar link submission button is being developed that will automatically send the suggested url and comments to the wiki, and also to the contributor’s personal page. A heuristic is yet to be developed for automatic transferring suggested links to the recommended links page – this requires close scrutiny because of a self-imposed quality standard that links need to be of a certain level of quality and are vouched for by a teacher who has received training in the quality review process.

2.5 Creating Content

The utility of Send2Wiki is also foreseen in selecting and moving content from course management systems to the eVrest wiki. However, minority language students often have less environmental exposure to French and thus they have smaller vocabularies and lower reading levels than similarly aged students in majority

language settings. While their English language skills are often on a par with their Anglophone peers, finding texts that are appropriately leveled in accessible French and aligned with the provincial curriculum remains a problem. This is particularly true for secondary science courses where writing levels are typically higher than the grade level [9]. Translation from English exacerbates the reading level as it usually results in 30% more words for the comparable English expression. eVrest is developing automatic indexing of each page's readability as a guide to both contributors and consumers, however it will be necessary to seed the wiki with initial content and provide incentives for early contributors.

The Francophone School authority of British Columbia (CSF) is committed to resolving the content issue, and as it develops on-line course materials, will contribute these directly to the wiki under a Creative Commons Licence. The wiki is important for providing content with all learners in the CSF (not just those in the on-line courses). The CSF hopes that by doing this in conjunction with eVrest, that other school districts will reciprocate and contribute content of their own. While there is little hope of coordinating 15 different school authorities so they all contribute materials, at least less redundancy of development will take place and there should be a better distribution of resources across the curriculum. We have held one workshop for partners on wiki editing, however a second workshop will be required on content development once a number of validate content templates and exemplars can be published. We have noticed other wikis have held quality competitions to encourage early content contributions, and we are examining the possibility of such events for our users.

One additional activity is to encourage the contribution of topic outlines or maps that can serve as "stubs", blank pages, to guide would be contributors to areas of current content need. Teams of contributors could then be recruited across content areas with a challenge to teachers to assign stubs to students as research projects. Provincial curriculum guides can provide an initial source of outlines. If learners are also encourages to provide content then clear guidelines for quality review, provenance verification and intellectual property will be required.

2.6 Creating learning activities

We are aware of the content production wiki in use by Quebec's distance education producer, Sofad, and are examining their use wiki templates to generate interactive learning activities and quizzes [10]. This creates a close linkage between the wiki and repositories for interactive learning objects and podcasts. Wikis are frustratingly textual. Even the popular MediaWiki program which Wikipedia runs on is at best awkward when it comes to integration of audio-visual materials or dynamic content. While new, graphic interface wiki systems are on just over the horizon, they are not yet stable enough for a production environment.

3. Extending community activity beyond the virtual

Ultimately we look to organizations such as Merlot (www.merlot.org) for leadership

in how to turn a content community into a sustainable professional development community of practice. If peer recognition and prestige can arise from advanced engagement in collaborative intelligence of eVrest and this prestige leads to the eventual production of a freely available curriculum resource for all grades of francophone minority students, and an inspiration for teachers then it will be indeed a successful, sustainable project. A wiki can be a simple tool for collecting open educational resources, but it will not be effective until its use is commonplace among members of the community of practice. Leadership and participation incentives may hasten inspection, but sustained development will only take place once the value for involvement can be demonstrated.

Acknowledgments. eVrest was supported in part by funding from the Canadian Council on Learning. Dr. Richards' work is supported by Canada's Natural Sciences and Engineering Research Council through the LORNET Research Network. The author wishes to acknowledge the technical contributions of Manon Ruel and Yves Otis.

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