

Wiki as an open educational resource in asynchronous courses: benefits and challenges.

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Abstract

Since 2013, TÉLUQ University (Quebec, Canada) has been using MediaWiki software for the Wiki-TEDia project to build an open educational resource (OER) aligning the asynchronous nature of wiki writing with self-paced student learning and the institutional model of continuous enrollment. Wiki-TEDia applies contribution-oriented pedagogy and OER-enabled pedagogy in self-paced educational technology courses. The primary goal of Wiki-TEDia is to create a comprehensive repository of scientific knowledge on teaching methods and strategies, engaging students in the collaborative creation of OERs beneficial to their professional community. The repository has grown continuously, achieving its goal of creating a detailed inventory of teaching methods. By 2023, after 10 years, Wiki-TEDia contained 135 teaching models, methods, and strategies, each described on a separate web page. Despite variations in form and scientific quality, the number of visits and positive feedback confirm the repository's success and social relevance. A quantitative evaluation conducted in July 2021 revealed that the repository had accumulated 5.5 million unique visits. Student participation has exceeded expectations. They expressed satisfaction and pride in contributing to the wiki and appreciated the repository as a valuable resource for their professional practice, even after leaving the university. The Wiki-TEDia project successfully embodies the core attributes of open pedagogy in distance learning, including participatory technologies, openness and transparency, innovation and creativity, sharing ideas and resources, a connected community, learner-generated content, reflective practice, and peer review.

Keywords: wiki, open educational resource, open educational practice

Introduction

Wikis are one of the participatory tools for digital publishing in Web 2.0. Implemented using wiki engines, which are a type of multi-author content management system, they allow the instant creation, modification, and publication of pages within a website. Their features encourage the emerging structuring of published content, open participation, and easy, continuous, and potentially infinite revision. Furthermore, wikis are characterized by the publishing process being transparent. This is a consequence of the visibility of changes made and the archiving of successive versions. Additionally, they provide participants with the opportunity to structure and control both the process and the outcome of their work through asynchronous communication on discussion pages.

Wiki tools have a unique potential to change educational practices, epistemological and pedagogical philosophies, and the roles of students and teachers in higher education and adult learning. This transformation is made possible by the collaborative and community-oriented nature of wiki-based learning, which emphasizes many attributes of open pedagogy (Barajas and Frossard, 2018, Zheng et al. 2015).

Wikis as Open Educational Resources in Higher Education

Wiki-based projects exemplify the principle of open pedagogy, which posits that the consumption and creation of knowledge are complementary and mutually reinforcing processes (Hegarty, 2015).

On one hand, they allow for contributions that align with the five R's of Open Educational Resources (OER): Retain, Reuse, Revise, Remix, and Redistribute (Wiley & Hilton, 2018).

On the other hand, they can promote a wide range of Open Educational Practices (OEPs), defined as practices around the creation, use and management of open educational resources with the intention of improving quality and innovation in education (Andrade et al., 2011).

Wikis for Asynchronous Collaboration in Distance Education

Wikis are versatile tools that offer a wide range of pedagogical possibilities, depending on the theoretical and epistemic framework, desired learning outcomes, learner characteristics, and institutional, organizational, and temporal constraints. In the context of campus teaching, wikis are used as collaborative spaces for the completion of small-group writing projects. The lifespan of these wiki-based projects corresponds to that of the groups involved, whether a class or a team. One of the most important advantages of wikis in a distance education setting is that they provide the asynchronous collaboration opportunities appropriate for self-paced courses. In this context, they offer the possibility to conduct projects whose duration is not immediately constrained by the time limits of classroom teaching.

The Wiki-TEDia Project at TÉLUQ

TÉLUQ University is the only French-language distance teaching university in Canada, located in the province of Québec. Its unique institutional framework is characterized by continuous enrollment, which allows students to learn at their own pace with individualized support from tutors. Most students are women who need to reconcile their professional and personal lives.

The [Wiki-TEDia](#) project was designed by the author in 2013 as an component of her self-paced online course in graduate educational technology programs (the French abbreviation "TED" was used to name the wiki project scope) (Pudelko, 2019). The primary objective of this course, entitled Teaching Strategies: A Cognitive Approach, was to facilitate the acquisition of knowledge and skills enabling students to select and adapt teaching methods and strategies in the instructional design process. The principal challenge of the course was to provide students with access to a comprehensive repository of teaching methods that they could explore and utilize. At the time, such a knowledge base did not exist within the French-speaking educational community. Rather than creating a ready-made repository for students, our team implemented contribution-oriented pedagogy (Collis & Moonen, 2005) and OER-enabled pedagogy (Wiley & Hilton, 2018) to enable students to build an open public repository of knowledge in the field. In this way, students could both learn and contribute to the

expansion of the public domain of knowledge on teaching methods.

Attributes of open pedagogy	Implementation of open pedagogy in Wiki-TEDia
Use of participatory technologies	Use of Mediawiki, free and open-source wiki software licensed under GNU General Public Licence (GPL)
Develop trust, confidence, and openness for working with others	Wiki-TEDia is hosted on the TÉLUQ server to foster students' confidence and sense of security in the public writing process. All TÉLUQ students and employees are granted writing rights by default. An explanation of the value of caring conduct and constructive criticism for learning is provided.
Encourages spontaneous innovation and creativity	Students contribute to Wiki-TEDia according to their interests and perception of personal and community knowledge needs. They can propose their own ideas and projects for improving the form and content of Wiki-TEDia.
Share ideas and resources freely to disseminate knowledge	All Wiki-TEDia content is available on the web under the Creative Commons license, Attribution-Share Alike (BY-SA 4.0). Students are encouraged to reuse existing open education resources respecting their publishing license.
Participate in a connected community of professionals	The enduring nature of Wiki-TEDia enables users to consult and respond to contributions from students with diverse professional backgrounds, as well as other TÉLUQ employees, spanning multiple years (2014-2024). Many students continue to utilize Wiki-TEDia in their professional practice.
Facilitate learner's contribution to OER	Participation is guided by instructions for activities, writing templates, quality criteria, an editorial line, technical support, and other factors. The teacher adapts the guidance as Wiki-TEDia evolves and students' learning needs change, ensuring that the guidance remains relevant and appropriate.
Engage in opportunities for reflective practice	Iterative contribution and the importance of revision in the writing process are emphasized in the learning activities proposed in Wiki-TEDia. Teachers provide constructive feedback on both the process and the content of knowledge building.
Contribute to open critique of others' scholarship	Students are encouraged to provide constructive feedback on each other's work. Modelling and observational learning are facilitated by leveraging the transparency of the wiki.

Figure 1: Alignment of Wiki-TEDia with Open Pedagogy Attributes from Hegarty's (2015) Model.

We chose Mediawiki to implement a repository publicly available on the web. In contrast to the academic projects carried out directly on Wikipedia, where anyone can contribute, only TÉLUQ students and staff are allowed to contribute to our project. This decision was primarily motivated by our concern to provide an environment in which all students feel comfortable writing. Indeed, research shows that novice contributors to Wikipedia projects are often discouraged by the complexity of the process and the directive interventions of established Wikipedia contributors or administrators (Ford & Wajcman, 2017). Students' contributions could be "major contributions" consisting of creation, revision, and discussion of web pages describing a teaching method, or "minor contributions", including corrections, additions, comments, suggestions, feedback. Students could also contribute to meta pages, which allow them to propose changes, improvements and comments on the Wiki-TEDia project. We emphasized learning by doing, modeling among students, and teacher support. Assessment of student work in the wiki included formative evaluation and ongoing monitoring of contributors' activities. The transparency of the wiki allows teachers to prioritize the value of learning processes over outcomes, facilitate

modeling experiences and observational learning, and provide ample formative feedback.

Benefits for Students and the Educational community

The project took a long-term approach, aligning the asynchronous nature of wiki writing with self-paced student learning. This allowed the repository to grow continuously, fulfilling its primary goal of creating a comprehensive inventory of teaching methods. By 2023, after 10 years of existence, the [repository](#) contained 135 teaching models, methods and strategies, each described on a separate web page. Although the form and scientific quality of each page varies, the number of visits and the testimonies of appreciation we have received confirm the success and social relevance of the open repository. According to a quantitative evaluation conducted in July 2021, the repository has accumulated 5.5 million unique visits. The top 10 strategies which have been visited more than 100,000 times, include experiential learning, 4-MAT, case-based learning, flipped learning, Bloom's Taxonomy, role play, exercises, Socratic dialogue, and cooperative learning. Regarding student participation, the results observed so far have exceeded what could have been expected based on the findings formulated in the available literature on the subject. Most students made around 40 minor contributions in addition to their main major contribution, which involved creating or revising knowledge in their personal project about a teaching method. A significant number of students expressed satisfaction and pride in contributing to the wiki, as well as their appreciation of the repository as a valuable resource for their professional practice, even after leaving the university.

Challenges

Wiki-TEDia experience allows us to highlight four key challenges for the success of wiki-based projects in distance education. First, it is essential to introduce and support students in adhering to a "wiki philosophy" that emphasizes openness and transparency in both the process and the product of writing. Ensuring the quality of the instructional design of wiki-based tasks, regardless of the level of openness and transparency chosen, is another important challenge. Careful preparation of project phases, learning activities, and assessments is necessary, even when learners are given a high degree of autonomy in using the wiki's functionalities and determining the modalities of their contributions. The quality of teacher guidance and support is also crucial and should take the form of scaffolding that adapts to learners' evolving skills and autonomy. Finally, another major challenge in the context of formal education is the choice and

implementation of learning assessments that consider the authentic, collaborative nature of the work done in the wiki.

Conclusion

The Wiki-TEDia project successfully engaged students in the collaborative creation of open educational resources useful to their professional community. The potential for continuous growth and improvement of the wiki becomes an advantage in asynchronous self-paced courses. It allows students to contribute to knowledge building on their own schedule, while maintaining the collective spirit of open learning.

Comparable examples

[EduTech Wiki](#) at University of Geneva uses Mediawiki for sharing information on educational technology. It is written by students and teachers.

[UBC Wiki](#) at University of British Columbia uses Mediawiki as a open environment shared by students, staff and faculty to develop open resources and course projects.

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