Collaborative Editing

Scenario

Freddy was late to class but managed to squeeze into the last seat in the auditorium; the class was packed. The lecture was on geomorphology, and the professor had begun the class by returning to the outline he had started in the previous lecture. Freddy opened his laptop and joined the wireless network. Freddy fired up his collaborative editing application and scanned the list of documents accessible to those in the room. Finding a set of notes that had already been started, Freddy requested permission from the document owner to join. When he accessed the notes, Freddy saw that two people he knew were connected to document he was looking at, and he could tell that they had been studiously taking notes since the class had started. Looking over what they had entered so far, Freddy quickly determined that he had not missed any new material in the 10 minutes of class he had missed.

Freddy knew the strengths of each of the other people collaborating on the notes because he regularly worked with them in lectures and on formal group assignments. Sue was a very fast typist and a fastidious note taker. In a lecture, she could capture what often seemed to be a verbatim transcript of everything the instructor said. Joe was the organizer. As Sue typed, Joe would move sections of text around on the page and insert headings to add structure. Joe didn't type very well, but he excelled at creating categories of content and keeping notes organized, even when a lecture followed lots of tangents and seemed on the surface to be disjointed. Freddy's contribution typically involved providing comments on the notes, bringing in ideas from other lectures and even other courses, setting the current lecture topic into a broader context.

Sue and Joe were glad to have Freddy's participation in the lecture notes, even if he was a few minutes late arriving. Because today's lecture topic was difficult for all three of them, they knew that their combined notes would be especially helpful later, studying for the final and working on their semester projects.

What is it?

Collaborative editing is the practice of a group of individuals simultaneously editing a document. Using collaborative editing tools, authorized users can edit a document, see who else is working on it, and watch—in real time—as others make changes. Unlike simple version control, in which a single working copy of a file is managed among editors one at a time, collaborative editing allows multiple users to make changes at the same time. A group of individuals—in the same location or geographically separated—can use collaborative editing tools to create a document that reflects the contributions of the group, without having to track and coordinate edits.

Collaborative documents are similar to wikis in that multiple users can change, add to, and delete content. They also resemble instant messaging in that users can see the input of all other users immediately. Some collaborative editing tools include instant messaging features so users can communicate in a chat session parallel to the document they are editing.

Who's doing it?

Collaborative editing was conceived as a tool for software developers, providing a way for two or more programmers to write code together, cross-checking each other's work and brainstorming how the application should work. Today, collaborative editing tools are being used more broadly. Authors co-writing a text can use collaborative editing to streamline the process of creating and revising content. A group of attendees at a workshop can write a single set of notes that are more complete than an individual could write alone. Similarly, some meeting organizers have come to rely on collaborative editing tools. Prior to a meeting, the leader writes an agenda. During the meeting, attendees use collaborative editing tools to access the agenda, update it with information they will present, and take notes on topics as they are covered.

Some educators are using collaborative editing as a demonstration tool. For example, an instructor can put a document online where the students in a class can access it. The instructor assigns read-only rights to the students, who watch as the instructor edits or updates the document, demonstrating a method of proper revision. The instructor then allows each member of the class to edit the document in turn, while the other members of the group watch.

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How does it work?

With collaborative editing, a user creates a document and announces to other eligible users—who are often on the same subnet—that it is available for editing. Depending on how each document is set up, some users can see but not edit it, while others have full access. Many applications are built with "zero-configuration" technology, which automatically locates users on a local area network and connects them without any input from the users; with other tools, users must manually add themselves.

A window identifies users who are connected to the open document and assigns each a unique color. Each user's cursor and all of his or her edits are highlighted with that color, and all edits are displayed immediately, allowing everyone participating to see who does what, as it happens. The real-time nature of collaborative editing prevents simultaneous edits from overwriting one another, which, though uncommon, is possible with wikis. It is possible to change another author's text, but because editors can see changes instantly, the revision process is truly collaborative.

Why is it significant?

Collaborative editing is a more efficient method of creating and revising documents. Before collaborative editing, a group of users who all needed to participate in a document had to coordinate their editorial steps, maintaining control of several versions of the document to ensure the integrity of the changes. In addition, such processes typically require a project leader to coordinate different rounds of editing and resolve conflicts. With collaborative editing, all of these steps happen simultaneously. Contributors can see edits as they are made, saving time and eliminating the possibility that edits could be inadvertently overwritten or that conflicting edits will be resolved improperly.

As a functional hybrid of wikis and instant messaging, collaborative editing creates a new dynamic for group work, whether for a formal paper or a set of lecture notes. Working simultaneously on a document can build a sense of community among the editors that is not possible if the document were simply passed from one individual to the next.

What are the downsides?

Effective collaborative editing depends on a conscientious document owner and a trusted group of editors. Although collaboratively edited files are stored on the document owner's computer, participating editors can make local copies of the file, which can result in the document's "splintering" into several versions. If the original of a document is closed during an editing session, the "master" can be handed off to any of the other users. Further editing of the document could result in lost edits and versioning problems. Editing tools also do not store a history of changes. Although each editor's changes are color-coded during editing, no record of the changes is stored—just the text is saved. The only way to preserve a snapshot of a document showing current edits is to take a screen shot or, with some applications, to export the document to a PDF.

Most collaborative editing applications are platform-specific, limiting their usefulness to people on different kinds of systems. The tools most commonly used by those with Macintosh operating systems are not compatible with either Linux- or Windows-based computers. Similarly, Windows-based tools generally do not work with Apple computers. These platform compatibility issues represent perhaps the biggest obstacle to broader adoption of collaborative editing.

Because collaborative editing puts substantial control into the hands of the editors, any one of whom could sabotage an entire document very easily, the practice requires high levels of respect and trust among the editors. In addition, some users may be uncomfortable moving editing and revision into a quasi-public, shared space.

Where is it going?

Makers of collaborative editing applications are beginning to address cross-platform compatibility. Some tools in development are Web-based, requiring only a browser and Internet access. As tools become increasingly platform-independent, the opportunities for collaborative editing among wider-ranging groups of people will expand significantly. Collaborative editing tools are simple to use and are particularly well suited for students working on a variety of projects. Other developments are likely to include versioning, which allows users to see a history of changes and who made them, and further refining of protocols, both explicit and implied, that establish expectations for appropriate and acceptable editing.

What are the implications for teaching and learning?

Group work and multitasking are fast becoming two of the hallmarks of today's learners, and collaborative editing is a natural fit for environments that support learning activities with technology. As students are increasingly asked to complete group assignments, collaborative editing tools offer an efficient way to accomplish them while taking part in an activity that many see as fun and that encourages them to engage with the material. Students in a large lecture or a small class can benefit from using collaborative editing tools to take "community notes"—reinforcing the material covered, seeing what other students identify as valuable, and developing a shared sense of respect among participants. Collaborative editing has special applicability for distance learning, where students may be separated by time and space but are still expected to work together on projects and to develop a sense of community.

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