EMERGING TECHNOLOGIES
WEB-WRITING 2.0: ENABLING, DOCUMENTING, AND ASSESSING WRITING ONLINE

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Trends in the use of the Internet in recent years, collectively coined Web 2.0, have precipitated changes in modes and uses of writing online. Blogs and social networking sites provide new opportunities and incentives for personal writing. This reading-to-write culture requires use and development of language skills. The challenge for language teachers is to extend students' Internet world beyond their first language, to leverage participation in the read-write Web as a learning opportunity for language self-development, and to find means to link informal and recreational writing with formal and academic writing.

There are increased possibilities for moving in these directions with new tools and services that have arisen to facilitate online composition/editing and to assess writing. Browser-based text editors make it easier than ever to participate in online sites. Language tools and services offer automatic assessment of writing, enabling the development of reviewing skills, so essential to improving writing. Finally, electronic portfolios provide a mechanism for bringing together samples of learners' written work, thereby encouraging more global self-assessment of students' language skills.

ENABLING WRITING ONLINE

One of the major developments of Web 2.0 is the increase in availability of tools and services that are accessed directly through a Web browser rather than residing on the user desktop. Recently, for example, Adobe released an alternative to its high-end graphics editor, Photoshop, called Photoshop Express, which enables online editing of pictures and graphics, following in the footsteps of services such as Picnik and picture-editing tools provided by networking sites like Flickr or Facebook. This same trend is evident in the large number of online editors to emerge recently on the Web. Most are free services, which are used within a Web browser, and which include OnText, widgEditor, XStandard, and Textile. The editors vary in their features, but most offer basic editing and formatting and not the full feature set of a word processor such as Microsoft Office. Since the editors are browser-based, they are agnostic as to operating system and will typically run in any of the major browsers. The online editors normally save documents being edited to a server, sometimes doing so automatically at certain intervals so that work is not lost. Some offer particular features such as Writeboard's ability to let users subscribe to a document with RSS, so as to be notified of editing changes. The Zoho Writer offers automatic versioning, document templates, and direct blog posting from within the editor. In fact, most of the editors are specifically designed for creating posts to blogs or social networking sites.

The fact that the new online editing tools feature WYSIWYG editing ("what you see is what you get") is a result of new features that anticipate HTML 5, the upcoming revision of the core Web formatting language. The two tags that enable word processing-like manipulation of text within a browser are contenteditable and designMode, now supported on mainstream browsers as well as on some mobile devices. Previously text-entry fields in HTML forms could accept plain text only. Unfortunately, not all browsers handle these new functions in the same way, which has made it difficult for developers to create rich text editing plug-ins that work universally. This is also true with support of the onpaste function, which allows rich text to be copied and pasted into a text editing window with all of its formatting intact. This is particularly a problem when copying from Microsoft Word due to proprietary markup tags. A feature that users expect to find in text editors, reliable undo, is inconsistently implemented in the online rich text editors, again because of differences in support among browsers.

Another new feature of HTML 5 beginning to be supported is a simple local database linked to the browser that allows documents to be saved locally, as is traditional in a desktop word processor. Previously, the only ways to save data locally was through the use of HTML "cookies", which have major limitations in number and size, or as Local Shared Objects, available only to the Flash Player. The local database currently used in the Firefox and Safari browsers is SQLite, a small but robust database that is embedded in programs rather than running as a separate process. It is also used in Skype, the popular Internet phone service.

Google has implemented its own version of an embedded database called Google Gears. Recently, Google added support for Google Gears to Google Docs, probably the most widely used tool for online text editing. Installing Google Gears allows text to be saved to either the Google server or on the local computer. Editing changes made while the user is off-line are synced to the online versions when the user is re-connected to the Internet. Like similar Web services, Google Docs makes it easy to share documents and to collaborate on projects. In edition to the text editor, Google also has introduced an online spreadsheet and presentation tools. Google Docs currently supports 48 languages, with 8 Indic languages having been added recently. The interface allows the user to change to right-to-left text display if needed.

Another free editor with explicit support for multiple languages is FCKeditor, which was designed originally for use in scripting languages, but now supports general text editing. Microsoft has launched its own Web version of its office suite called Office Live Workspace, which offers some different features from Google Docs, particularly the option of integration into the desktop Office suite. Microsoft Office integration is also a feature of Zoho Writer. Also of interest to language professionals is MLEditor, a tool specifically designed for multilingual use. It features Unicode-related conversions as well as conversion between Traditional and Simplified Chinese. A similar tool is MtScript, a multilingual text editor that enables use of different writing systems within the same text.

DOCUMENTING WRITING ONLINE

Google offers online storage of documents up to a maximum of 5,000 documents or presentations. This is a service now available from a variety of companies, some of which, such as box.net and omnidrive, specialize in providing (free) document storage. This allows both for access from multiple locations, as well as for easier sharing of documents. Some offer specially formatted access from mobile devices, such as Mobile Google Docs. Of course, much of the writing done on the Web today is saved centrally through having been posted in sites such as MySpace or Facebook or as entries to blogs or wikis. In institutional settings, there is encouragement, sometimes an obligation, to collect student writing in a more structured environment, such as an electronic portfolio or e-portfolio.

Portfolios have long been a standard way for professionals such as artists or architects to collect and showcase their work. Aspiring teachers in the US now routinely are expected to assemble a teacher portfolio. Increasingly, students are creating them for academic, professional and personal use. In order to make portfolios sharable, the trend has been away from hard copy versions and towards e-portfolios. As privacy concerns may be an issue, e-portfolio systems normally provide some kind of access control, which may be global or fine-tuned to specific groups or parts of the portfolio. One of the advantages of maintaining a portfolio of writings online is the ease with which one may share the content. Having an electronic portfolio also makes it a simple process to incorporate other kinds of work such as multimedia files or presentations.

There are many different options for creation of an e-portfolio, as Helen Barrett has demonstrated in recent years by duplicating her own portfolio using a variety of (mostly) free online tools and services including wikis (WikiSpaces), blogs (WordPress), hosting sites (GeoCities), content management systems (Plone) and even a bookmarking service (del.icio.us). She has offered documentation for the process of creating an e-portfolio using Google Docs and other tools from Google. University students may decide–

or be required to–create a portfolio from within the learning management system (Blackboard, Angel, desire2learn, etc.) in use at their institution. Creating an e-portfolio in such a closed system, however, limits its use and may defeat the goal of establishing a mechanism for life-long documentation of learning and achievement. Efforts have been underway for some time to create standards for e-portfolios that would allow migration from one system to another. The IMS Global Consortium has introduced the IMS ePortfolio Specification, which allows for a variety of different kinds of portfolios (assessment, presentation, learning, personal development), which can be combined, exported, and imported into compatible systems. So far, however, little support has been forthcoming from commercial vendors. The Europortfolio project, headed by the European Institute for E-Learning (EIfEL), is an attempt to coordinate portfolio standards among European countries.

There are several open source projects which promise greater interoperability including the Open Source Portfolio, part of the Sakai Project, and Mahara, a project out of New Zealand which features sophisticated access control and optional integration with Moodle. Moodle users also have access to Moofolio, specifically designed for that open source learning management system.

There are next generation electronic learning environments that are built around Web 2.0 services. The Elgg and Digication systems, for example, are designed to encourage the integration of e-portfolios with services such as blogs. One of the more extensive projects along these lines is ePet portfolio, which originated at Newcastle University and is now a collaborative, EU-funded project. ePet has been designed for maximum flexibility in its use, allowing both stand-alone access and integration into a managed learning environment, and includes a project for developing portfolio interoperability.

Portfolios have obvious benefits for language learning as a means to include writing samples and other documentation of language ability. Probably the highest profile language portfolio project is the European Language Portfolio (ELP), which has been in existence since 2000 and has a large number of local implementations. The vast majority of the validated ELP systems are not electronic. An exception is the implementation in the Netherlands. The Dutch ELP follows the ELP division into *linguistic biography*, *language passport*, and a *dossier* of written work. However, it also incorporates an interesting additional component called, *learning activities*, which allows learners to practice their language skills. This is one more advantage of an electronic portfolio, the ability to link to both open-ended environments such as blogs or to targeted resources for enhancing skills.

In addition to the Dutch ELP, there have been a number of other projects to create electronic versions or enhancements of the ELP. The Leipziger Lernportfolio begins with the ELP and adds more professionally-oriented options. The eDossier project from Spain is integrated into a Web 2.0-inspired learning environment and incorporates its own online text editor. Global Language Portfolios, from Pat Cummins of Virginia Commonwealth University, combines both the language assessment standards of the European Common Framework of Reference for Languages and the proficiency standards of ACTFL (American Association of Teachers of Foreign Languages).

Ideally, e-portfolios can serve to bridge the gap between formal instruction and informal learning. Of course, this is only feasible if the portfolios are designed primarily to allow users to determine how best to present and document themselves and their work and secondarily as a means to fulfil a requirement or as part of a formal assessment process. Having a portfolio system with the flexibility to easily divide private from public spheres, to link or not as desired to outside sources, and to include standardized criteria only when needed, is more likely to become a vehicle for life-long learning and its documentation, rather than simply an academic exercise. Potentially, well-designed and expandable e-portfolios offer to the Myspace generation a more inviting environment than the rigid confines of the traditional learning management system.

ASSESSING WRITING ONLINE

The use of portfolios in language learning should contribute to learners taking more responsibility for documenting and assessing their language abilities. Only in rare cases, such as the Dutch ELP, do portfolio environments supply help or advice in improving language skills. There have been, of course, means for users to receive feedback on the quality of their writing for some time. A variety of proofing tools are available, both for spelling and grammar. These tools are widely used, but vary in their usefulness. This is particularly the case with grammar checkers, which tend to be designed for native speakers, and which often generate too many false positives to be useful. The development team for the Microsoft Office grammar checkers has an interesting discussion of the challenge in creating effective grammar checkers and the individual language idiosyncrasies which make it difficult to write generic grammar analysis code.

In addition to Microsoft tools, there are a variety of online services such as spellchecker.net or spellcheckplus which check both spelling and grammar (English only). One of the more interesting projects of this kind is LanguageTool, which is available in 12 languages. User text is first analyzed sentence by sentence, with each word assigned a part-of-speech tag and each sentence split into semantic chunks. Rules for that language are then applied to provide feedback to the writer. The basic rules are written in XML and the format is basic enough for non-programmers to be able to add additional rules. LanguageTool can be used as a stand-alone program or integrated into the open source OpenOffice software. AbiWord is a similar open source, multilingual text processor with proofing capabilities. It offers support for a wide variety of languages, including 19 different versions of Spanish.

In terms of assessing writing, there are now a variety of products that go further than checking grammar; they actually supply formal assessment and a score. These are usually known as Automated Essay Scoring (AES) programs. The best-known choices in the U.S. are Criterion e-rater from the Educational Testing Service and My Access! from Vantage Learning. These programs are built, as are the grammar checkers, on advances in natural language processing as well as artificial intelligence. They are used primarily in high-stakes, high-volume contexts such as standardized testing. Some offer evaluation of practice writing submitted online. Most of the advanced work in this area has been done in English, so such tools may be of particular interest to ESL or EFL teachers, but the kind of writing evaluated by AES programs is not what is emphasized most often in language learning. They look for a set structure (like a formal essay) and tend to encourage formulaic rather than purposeful writing.

What tends to be of most use to learners is indirect feedback, which points to problems in written work but leaves it to the writer to find the solution. This requires the learner to reflect on the application of language rules to one's own actual writing. Many language teachers use codes (such as John Lalande's ECCO - error correction code) to mark student writing. There are several programs that allow instructors to enter such codes electronically. Markin, for example, is a Windows program that allows for code marking in 7 languages. Annotations are returned to students in RTL or HTML formats and can be emailed. Markin includes a statistical feature, which allows for collocation and computation of annotations. Programs like Markin have the advantage over mainstream grammar checkers in that they are designed specifically with language learners in mind.

While Markin is a commercial product, a free Web service called BonPatron is available for French writers and was recently reviewed in *Calico Journal*. Users type or paste text into the text entry box and then click *Check the text* (the interface is in English or French). BonPatron then checks and returns the text in the same window, flagging but not correcting probable problems. It uses text formatting and colors to indicate the nature of the problem and its severity. Passing the mouse over an item brings up an explanation and a sample of correct usage of the form in question. BonPatron provides the option of displaying a list of marked problems and the category to which they belong. Because BonPatron flags but does not correct errors, it requires the writer to reflect on the problem and to generate a solution. This

more active engagement in learning is in keeping with current language learning practices. A tool like BonPatron could be particularly helpful for inexperienced teachers or in situations in which faster feedback is desirable.

While products or services like BonPatron improve on the traditional spell and grammar checkers, they still target only one side of assessing writing, focusing on specific errors in grammar or vocabulary usage. They don't address more general issues of global composition and structure or more communicatively oriented criteria such as appropriateness of register for the target audience or cultural/sociolinguistic context. It clearly is a much simpler task to find errors in aspects of writing less prone to subjective judgments and for which there are clear-cut right and wrong responses. Artificial intelligence is not yet at the point where more intangible and creative aspects of writing can be effectively machine-evaluated.

For situations in which an automated analysis of student writing is desirable, an interesting alternative can be to supply learners with samples of annotated student texts. These texts can be annotated in advance and supplied to the learners so they can judge their own compositions in light of the corrections and comments given by instructors for the sample texts. This was done in an Australian project entitled Bridges to China. The study showed that users reacted well to this kind of peer-to-peer interaction. The program was used in a distance-learning environment, and it does seem to lend itself well to learners working independently. Ideally, of courses, one would want to make available to students a range of opportunities and options for improving their writing, including annotated samples, peer review, and automated or indirect feedback. Social networking sites have become important in the lives of many young people, and this argues for finding means to help students become more articulated and effective writers in whatever language they choose.

RESOURCE LIST

Text Editors and Proofing Tools

- Google Docs Online writing and editing
- Multilingual Word Processors and Text Editors List for Windows users
- Edit Pad Online text editor
- XStandard Plug-in WYSIWYG editor
- Textile Web Text Generator
- widgEditor WYSIWYG editor
- FCKEditor Popular rich text editor
- MLEditor Multilingual editor
- MTScript Multilingual editor
- AbiWord Open source word processing
- Spellchecker.net Online spelling, grammar, and thesaurus checking (English)
- Markin Tool for marking error codes
- BonPatron Online grammar checker for French
- Design and evaluation of grammar checkers in multiple languages Lessons from Microsoft
- CrossCheck Grammar checker for Swedish
- LanguageTool Open Source language checker
- Language Tools Open source projects
- Office Live Workspace Microsoft service

- Analysis of Office Live Workspace Comparison with Google Docs
- Google Docs mobile An entry page formatted for mobile devices

Electronic Portfolios

- Electronic Portfolios Collection of e-portfolios in different formats
- Open Source Portfolio Part of the Sakai project
- Mahara Open source e-portfolio project
- European Language Portfolio
- Validated ELP systems Officially sanctioned implementations of ELP
- Global Language Portfolios Project from Virginia Commonwealth University
- ePet European e-portfolio project

Standards

- HTML 5 From W3C
- Cient-side database storage Part of proposed HTML 5
- ContentEditable Demo Demo of HTML 5 feature
- Local Browser database Example using WebKit/Safari
- SQLite Lightweight database engine
- IMS ePortfolio Proposed standard for electronic portfolios
- Europortfolio Project to coordinate use of portfolios