Learner-friendly Technology in a Brain-friendly Classroom: Appropriate Technology in the Service of Proficiency

Carl Falsgraf
Center for Applied Second Language Studies
University of Oregon

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I was once asked to give a keynote address at a state conference. There were actually two keynoters for that conference, one for each day. The other keynoter, whose topic was using the Internet in the classroom, spoke on Friday, while I was scheduled for Saturday. The heart of her talk featured a demonstration of how to access and use various websites. Of course, part way through her presentation, the Internet burped and she lost her connection, lost the point of her talk, and lost her audience. I sat smugly in the audience, turned to the person next to me and said, "I would NEVER rely on that kind of fancy technology. I am so glad my talk only uses overheads."

So the next day I start giving my talk. Everybody is engaged and very interested in what I'm saying. About 10 minutes into the talk I flip on the overhead to show my first example, and the overhead turns off like a flash bulb and dies.

In that instant, the overhead transformed from a familiar old friend into "technology." People started scurrying around trying to find overhead bulbs poking at the machine as if turning it off and on would inspire the offending bulb back to life. (It won't surprise you to hear that it the women were looking for new bulbs and the men were frantically pushing the on/off button.) In short, they started treating the overhead in just the same manner as people had treated the other keynoter's computer the day before.

Technology can be scary. We have a love/hate relationship with technology; expecting it to solve all of our problems, though terrified that the machines will dominate our lives. Neither is a real possibility, but may seem like it in the thrill of seeing a whiz-bang demonstration of the latest gizmo or the abject panic when you realize that the computer lab just crashed and you have 30 14-year-olds with nothing to distract them from following their basest impulses.

I am not a geek. I use e-mail, search the Web, and word process...and that's about it. My academic training is in literature and second language acquisition, so I would like to take as my starting point what literature can tell us about our relationship to technology, then look at how students learn, and go from there to exploring ways in which technology can help us make our classrooms more compatible with the ways students learn.

Literature and Technology

What can literature teach about technology? It can tell us about the most important factor in using

technology effectively: our own attitudes towards it. Jules Verne and Mary Shelley invented science fiction in the 19th century. Until then, visions of the future focused on utopian social relations, such as Jefferson's nation of small, independent farmers, or apocalyptic religious visions, such as Dante's inferno. What Verne and Shelly added was the notion of technology as the source of that utopia or that hell. Let's start with hell and work upwards.

If you have seen the Hollywood Frankenstein movies, you know that Dr. Frankenstein "created a monster" by playing God and using two cutting-edge technologies of the day - surgery and electricity. His creation then escaped, taking on a life of its own and terrorizing the population. The Frankenstein metaphor has come to symbolize the dangers of scientific hubris and our fear of technological inventions scarcely7 understood. The power of this metaphor has become more powerful as the technology that terrifies us has gone from electricity and surgery in Shelley's time, to gas chambers and atom bombs in Bella Legosi's, to today's computer databases that know which genetically-modified foods you bought at Safeway for dinner last night. As I said, technology is scary.

But Shelley's original monster was quite different from Bella Legosi's. Based on the movie, you would think that Dr. Frankenstein implanted the brain of a grizzly bear in the monster - lots of roaring, holding out stiff arms, and dismembering innocent people. Shelley's monster, however, clearly has a human brain. There are long passages of the monster's philosophical musings on the notion of identity, the relation between the individual and society, and the nature of prejudice. The population misunderstands and persecutes the monster because of his appearance and the nature of his birth.

My reading is that Shelley's Frankenstein is not just about the terrifying potential of technology – about "creating a monster" - but about us and our irrational fears of the unknown, the new, and the different. Shelley's genius is that she captured both the means of destruction - runaway technology such as gas chambers - and the social conditions that enable such horrors to be unleashed: hatred, intolerance, and mob psychology.

Are you a villager, torch in hand, convinced that the monster is a menace on the loose? Or are you the young girl who was able to see past her fear, understand the heart of the monster, and befriend it?

Jules Verne had a different vision of the future. Technology would further the human spirit by allowing new and wonderful experiences. Our curiosity about the nature of the world would lead us to unprecedented knowledge and prosperity. Like Shelley, he was prescient. Technology, whether it be hot air balloons, automobiles, or spacecraft can provide us with experiences that expand the mind and feed the spirit.

Jules Verne had the spirit of a teacher. He believed that the human condition could be improved through the expansion of knowledge. He was optimistic about the future, as all teachers need to be. Jules Verne was what would now be called an "early adopter:" the kind of guy who rushes out to buy the latest Palm Pilot model, can't wait to upgrade to OS X, uses Internet dating services.

Are you an early adopter? A latter-day Phileas Phogg willing to get in the balloon and trust that you will come down somewhere safe?

We should neither be villagers giving in to our Philistine instincts of destroying that which is new and unfamiliar nor Vernian heroes setting off in untested contraptions. The model for a healthy approach to technology is - and it pains me deeply to say this - Star Wars. Mary Shelley and Jules Verne had more literary talent in their left toenails than George Lucas has in his whole body. But Lucas was correct on our modern relationship with technology.

Star Wars is best known for its special effects. The audience may be thrilled, but the characters don't even bat an eye. The Star Wars heroes are neither fearful nor enamored of the technology at their disposal. Luke and his sidekicks prevail against superior technology - such as the Death Star - with their relatively rudimentary spacecraft and weapons. The key to their success - and ours - is a superior sense of spiritual purpose. It is The Force, not the fancy gizmos that ensure ultimate victory. Parlor tricks such as levitating objects are merely exercises to cultivate spiritual discipline and strength, not ends. The good guys are as likely to take down an enemy with a club as with a laser gun. Light sabers are cool, but really, they are just high tech swords. But they do the trick. Just like chalkboards.

Language Teaching and Technology?

So let's assume we are neither villagers in the mob bent on killing the monster nor Phileas Phogg willing to try any new-fangled gizmo that comes along. We are Luke Skywalkers: We are willing and able to use whatever low-tech or high-tech tools are at our disposal to accomplish our mission. May the Force be with you.

Our mission - The Force - is proficiency: Every student able to communicate meaningful content in realistic contexts. How can we create realistic contexts in our classrooms? Role plays are great, pair work is wonderful, but at some point, students know that this is play acting. The content of what they are talking about, the cultural context in which they are operating is contrived. They are not communicating with a community of real people, but a contrived community of personas. I am here to argue that the best - the most appropriate - use of technology in the second language classroom is to provide authentic, contextualized interactive tasks with members of a target language speech community. Let's break that down.

Authentic:

The definition of an authentic text is one that is written by native speakers for native speakers. Authentic oral communication can be either between native speakers or speech to or from a non-native speaker **for a real-life purpose**. Think about what a student hears from you on a typical day. First, how much of that speech is English? Clearly not authentic. How much is for pedagogic purpose? Also out the door. Now how much of the target language does the student hear that is for a real-life purpose? Perhaps greetings, some housekeeping matters, an occasional exchange in the hall? How can we expect students to succeed in authentic contexts when they never experience one? Technology can help.

Contextualized:
Authentic language always appears in context. Pedagogic language rarely does. We read the paper for information. We read labels to make sure foods don't have anything we are allergic to. We know what we are looking for and context gives us most of the information. You never see stock quotes or poems on the side of macaroni and cheese box. Context helps us focus on our specific task. Off-task students are a pretty common sight in most of our classrooms. Maybe it is because we just gave them a reading passage called "Jose's Diary" in which he tells us how he gets ready for school in the morning. Nice for contrasting the Preterit and Imperfect, but no real-life purpose and no context. Textbooks are, strictly speaking, a context, but not one that will do much good in the real world. This is what people mean when they say, "I studied two years of French, but when I went to Paris I couldn't say a thing." Of course not. They had never been in that context, or anything like that context, before. Technology can help.

Interactive:
How often do students get a chance to interact with authentic, contextualized texts - spoken or written - in our classrooms? Not enough. The major focus of second language acquisition studies over the past ten years or so has been on the effect of interaction. Study after study shows that students learn better when they are interacting with others. Play a tape of a native speaker describing how to put together a puzzle and about 40% of the new vocabulary contained in the instructions is retained. Have a real person there to describe the same thing and over 60% is retained. Why? Two reasons: First, as human beings, our memories are wired to remember more emotionally intense events. Monkey sees a sunset; forget it. Monkey gets chased by a lion, never forget it. Dealing with real human beings is full of emotions that become associated with words, helping us to remember them. Secondly two-way communication allows for back channels ("Huh?" "What's that?") and other devices to increase the comprehensibility of a passage. How much interaction happens in the typical language classroom? Not enough. Technology can help.

Tasks:
A task is an activity with a concrete, non-linguistic, realistic goal which requires language to reach that goal. Notice that the goal is not linguistic, but that it requires language to accomplish that goal. In other words, it is authentic. In real life, how often do we say, "I think I need to brush up on my conjugations, 'go, went, gone' 'come, came, come' 'amo, amas, amat'"? We have plenty of authentic tasks in our lives that require language, however. You want your kids to do their homework (imperatives!), you want your principal to give you a bigger classroom next year (modals, interrogatives!), you want to tell a joke (narrative past!).

The beauty of assigning tasks is that just as we focus on a goal and let the language take care of itself, students engage in tasks and focus on the content of what they are doing, not the forms that they must use. So tasks are extremely valuable as a means for building fluency; for making language automatic. When we first started doing oral assessment in Oregon, teachers complained bitterly when students who "knew" the topics of weather or family or food did not pass the oral performance assessment. We showed these teachers the tapes of their students being asked, "So what did you eat for breakfast?" and sitting there tongue-tied. The most common reaction was BUT WE COVERED FOOD IN CHAPTER 3!

Yes, it was covered. Yes, the student "had" food words. But it was not automatic, it was not acquired, it was just memorized. Tasks allow us to take language knowledge and develop it into language proficiency.

So why in the world would we do anything else when we use technology to teach language?

So, to review, our technology checklist looks something like this:

Is it authentic? ?Is it contextualized?? Is it interactive?? Is it task-oriented?

Tools from CASLS

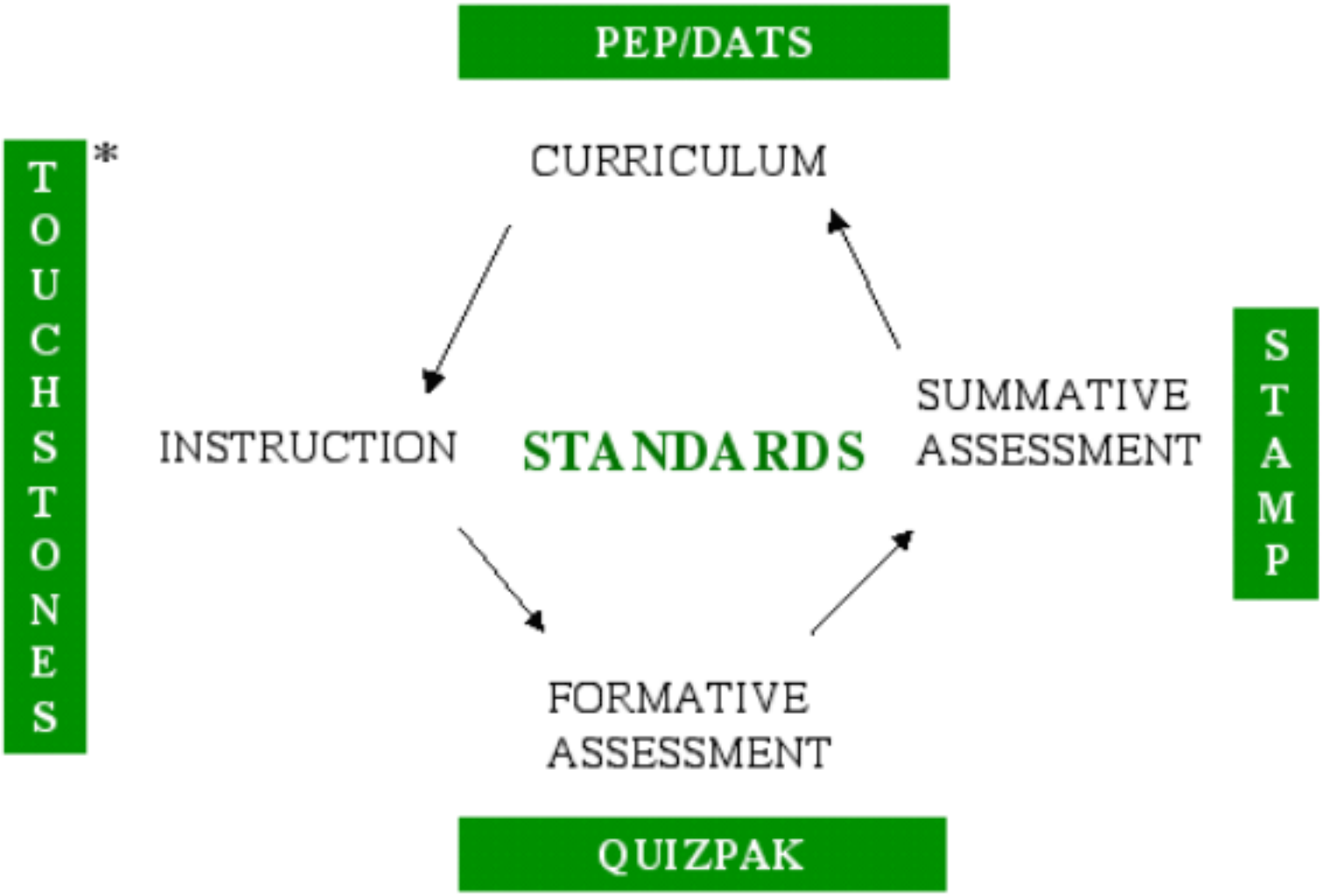
Now that we have talked about technology and language teaching in the abstract, let's look at a concrete example that we developed at the Center for Applied Second Language Studies at the University of Oregon.

Confronted with the challenge of helping all students reach rigorous proficiency standards, CASLS devised a set of online tools with the goal of making proficiency possible for all teachers and their students. Because the processes of assessment, lesson planning and selecting materials, have been automated, even busy teachers have time to plan proficiency-based lessons and assess their students.

Benchmarks:

At the core of all these tools are Benchmarks. The Benchmarks are based on ACTFL Proficiency Guidelines, but are much more specific. This specificity is the key to the whole system. By "digitizing" proficiency, we make the abstract concepts of proficiency concrete and allow assessment items and teaching materials to be stored in a database. Because Benchmarks are consistent with ACTFL Proficiency Guidelines and National Standards, teachers can start moving in the right direction without extensive training or time investment.

The diagram below shows our four key products and their relations to standards.



Standards-based Measurement of Proficiency (STAMP)?
Assessment is at the core of a standards-based system. Unless we all use the same measuring stick, how can we ever judge our students fairly and begin to articulate our programs? Imagine two students who come to a university and say, "I studied Japanese for two years and had an A-average." One student had a highly-trained, very demanding teacher, who emphasized oral practice and authentic reading in class. The other student's teacher focused on culture and had students fold origami, make sushi, and visit Japanese restaurants. Obviously, these two students do not belong in the same class. But this is what happens now because we do not have a common measuring stick. STAMP is designed to be that measuring stick.

Proficiency, Efficiency, and Planning (PEP) and Dynamic Activity Templates (DAT)?
Assessing students does not make them more proficient; it just tells you how far they have progressed. PEP is an online teaching-planning tool designed to help teachers plan lessons that will help students to higher proficiency levels. PEP walks teachers through the process of creating thematic units, setting objectives, finding activities to help their students meet the objectives, and sequencing them into effective lesson plans. Embedded in PEP are DATs, which are online materials, developed specifically to help students reach higher benchmarks. These are not traditional materials, however. Rather than being fixed in a particular order, like textbooks, they are accessed by searching a database. Once you

identify a DAT that you like, you can either print it out or download it onto your computer as a Word document. Once it is downloaded, it is yours! You can delete unwanted vocabulary, add special activities you are working on, or personalize the activity with students' names or local references. Once a textbook is printed, you can't change what is on the paper, but with DATs every teacher has the power to customize activities to meet the needs of students.

Conclusion?

The Proficiency Movement began in the 1980s with the publication of the ACTFL Proficiency Guidelines. Its vision was revolutionary: the purpose of language teaching is to prepare students to communicate meaningful content in realistic situations. While "proficiency" is the buzzword that everybody uses, in most classrooms the majority of the time is still spent developing formal knowledge through explanations, drills, or worksheets. The same is true of standards: everybody thinks they are great, but standards-based classrooms are few and far between. Why is there such a gap between what we say and what we do?

Although most teachers want to focus on proficiency standards, most lack the time and expertise to develop materials, lesson plans, and assessments and so continue to follow a textbook. It isn't entirely fair to blame teachers. With growing class sizes, who has the time to create special lessons, materials, and tests?

Technology can help us become efficient enough to individualize instruction, to plan for proficiency, to measure students' progress toward the goal of communicating effectively in realistic situations. This is not a pipe-dream: The tools are available today. Unlike Phileas Phogg, we know that the balloon works and where it will land. Anybody who can order a book online can use these tools to improve their teaching. There is nothing to be afraid of here. We have not created a monster. Online assessments and teaching tools are no more likely to take over our lives than vacuum cleaners are. If we remain focused on the goal of proficiency using these tools to improve student performance we will surely prevail in our struggle. May The Force be with you.