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Opening Educational and Personal Horizons with the New Emergent Technologies

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Abstract: *This presentation will showcase a number of the key Web 2.0 tools and unveil the underlying mode of Web 2.0 learning. Some of the emergent technologies to be demonstrated and discussed are those that open horizons for academic and personal expression. Among those tools are: animation, converting text to voice, digital storytelling, video-production, project sharing, etc. The presenter will outline the characteristics, functionality and usefulness of the technologies to empower learners' abilities and talents. The goal will be to both demonstrate these Web 2.0 tools but also to bring about an understanding of why they represent a further quantum leap in teaching/learning over the prior generation of Web 1.0 tools.*

Keywords: *Web 2.0, learning, proceedings, personal expression, emergent technologies.*

1 Introduction

The emergence of a new generation of software that can broadly be called Web 2.0 raises fascinating and far reaching pedagogical issues. It exposes an evident gap between the leading edge of learners who master a means for quantum change in their learning and teachers who rely on the prior generation of tools as well as the prior generation of conceptualization in their teaching. The result is that the state-of-the art of teaching fails to keep up with the state-of-the art of learning that is supported by the new emergent technologies.

The consequences of such disjuncture invite teachers to fall back on their familiar dominant mode of pedagogy, behavioral approach, based upon one way of delivery and communication. Direct instruction as the main strategy reflecting the behavioral approach, isolates each learner as an individual receiver of knowledge. It often further divides learners by forcing them to compete on artificial indices of achievement. Finally, it creates an ongoing dependence on the teacher.

With the emergence of new technologies such as videos on mobile phones, cheaper digital cameras and video recorders neither teacher nor learner is no longer limited to the perspectives provided on the Web. New online software applications have made it easy for the hitherto learner/consumer to upload their own created content on their own Websites. Thus, the Read-Write-Create-Communicate-Share Web emerged.

These new Websites e.g. blogs and wikis, youtube, voicethread, slideboom, and diigo, etc. are not static but collaborative. Communication between the author and reader in the form of feedback is encouraged via the comments section. Business models are changing because of the user-created aspect of the Web.

We are at the cusp of educational change. New technological innovations have made an impact on how we do business, how we live and on our students' lives. They are using digital technology to connect with others globally so it follows that it must also have an impact on pedagogy. There is a strong voice of social scientists, psychologists, teachers and educators who actively use technology and understand its educational power: 21st century literacies need to be taught in schools. However, education seems to be the last institution to acknowledge this change – perhaps, because of the issue of student online safety. Digital citizenship must be grown in the curriculum and be taught to students so that their experiences on the Web are safe and functional. This can only be taught if students have access to other students on the Web - (we don't learn to swim or cut paper using scissors by watching a video). Many forward-thinking educators are progressing in this area with the help of other educators in their Personal Learning Networks, they are creating global projects (E.g., Flat classroom, Flat Stanley, etc.) with student groups around the world. The resulting benefits of students learning with others from different cultures and backgrounds are many - harmony, understanding and respect are a few consequences of this process but crucial in today's world. The teachers' role becomes one of guide and facilitator. Our job includes teaching students how to learn for themselves. We are not always the experts and can invite experts in to help our students learn. In fact, given the sweep of knowledge out there, we cannot be experts---this is a fundamental shift in our expectations and role.

Thus, learning in a Web 2.0 environment enables a higher order elaboration of the conversation, generating a community of learners who collaborate, become independent but cooperative learners, and engage in synergistic learning advances. While any individual would be overwhelmed by the flood of such innovation, collaborative networks pull in change and disseminate it rapidly through a process of mutual learning. The student is thus embedded in a learning engine much more powerful than any independent learner can keep up with.

The outcome is that the teacher as individual is further disadvantaged in keeping up with their students unless they are willing to swim in the same ocean. But having grasped the importance of swimming, they must still learn how to swim. So, teachers and students become equal in this environment, they are learners and share the skills of life long learning.

The result is that teachers need to both master these new tools if they want to capture their power as pedagogical aides and remain current. And they must immerse themselves in the same learning context which is driving their students to be rapid innovators. Implied is that the desire to specialize and become a narrow expert, so ingrained in modern education, must be balanced with the desire to be a generalist acquiring diverse knowledge.

What are the tools that make learners engaged, focused and empowered? In my almost 5 years of experience with Web 2.0, I selected, identified, and classified the tools that can serve different purposes and be used for a variety of functions to help students to learn and excel.

With the proliferation of tools, there has been absent until recently efforts to create a taxonomy or classification system by which to sort their characteristics. One effort classifies tools according to their role in providing education against the categories of Bloom's taxonomy (Andrew Churches, 2008). Some educators classify the tools from the point of view of their role in teaching (Kathy Schrock), others place the tools in

a chart with the logo images and icons (Go2Web20, or Web 2.0+) for easy use and application to personal sites. Another group has created an interactive wikispaces site where the Web 2.0 tools are presented in different categories according to their functions in such creative processes as presentation, collaboration, organization and research (Tangient, LLS Wikispaces Team). Some web specialists provide the tools without explaining the ground for the choice of the tools (E.g., My e-coach).

The basis for my approach to classify the emergent technologies (Web 2.0 tools) is their functionality in empowering learners to develop their abilities and skills for self-learning, self-expression and social networking and collaboration. I employ the following six categories to rate the power of emergent technologies: organization and research; creative writing; image, audio and video production; presentation and show; social networking/collabration; and assessment, feedback and reflection. The links in this printed version are not active; for an electronic version, see in the bibliography Smirnova's pbworks site.

Organization and research tools:

google, soho, zotero, jott, reqal, timelineing, doodle, voo2do, tinyUrl, del-icio-us, diigo, JobtheWeb, Webspiration, Bubble.us, Gliffy, Mindomo, Mindmeister, etc.

Creative Writing:

Blogger, LiveJournal, LetterPop, Scrapblog, Web20Write, Glogster, Wordle, twitter, Mixbook, BookR, ClassTools, ToonDoo, Storymesh, Tovlet, etc.

Image, Audio and Video production:

Image (more than 85 tools): Picasa, Flickr, Picnik, Photobucket, Photoshow, Photoshop, BeFunky, Picture2Life,

Audio: Odeo, Autacity, AudioPal,

Converting text to sound: OdioGo,

Image Animation and Audio: Voki, Yodio, VoiceThread, PodOmatic, Gcast, Photostory3

Video: Animoto, Gabcast, Mypodcast.com, etc.

Presentation: slideshare, sliderocket, slideboom, AuthorPoint, authostream, 280 slides, Slides, SmileBox, Picturetrail, Plick, etc.

Social Networking/collaboration: Ning, WiZiQ, EduFire, Moodlerooms, PbWorks, WikiEducator, Wikispaces, Wetpaint, twitter, plurk,

Assessment, feedback and reflection: PollDaddy, Polleverywhere, Quizlet, Studio, Zoomerang, Googledocs, etc.

2 Conclusion:

The nature of World Wide Web and emergent technologies is a never ending process. There are predictions that the mobile device will be the world's primary connection tool to the Internet by 2020 (Scott McLeod, Karl Fisher, 2009), by 2049 a \$1000 computer will exceed the computational capabilities of the entire human species (Karl Fisher, Jeff Brenman, 2008). What does this imply for education, teaching, and learning?

Will our today's students be prepared to compete in the world of change and rapid information?

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Curriculum



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About the Author:

Ludmila Smirnova is Associate Professor of Education at Mount St. Mary College in Newburgh, N.Y., U.S.A. where she has taught for the past 9 years. At the Mount, she offers courses in *Curricular Planning*, *Methods of Teaching* and *Teaching with Technology* and serves as counselor to Kappa Delta Pi, the International Honor Society in Education. She has become increasingly recognized for her leadership in the application of emerging Internet technologies to education. She has run numerous workshops on the application of Smart Technologies (e.g., Smart Board) and of Web 2.0 tools to the college and primary/secondary classrooms.

Prior to coming to the Mount, Dr. Smirnova was visiting professor at Ramapo College of N.J. for two years. In her native Russia, she was professor of education at Volgograd State Pedagogical University, where she also served as Dean of the School of Foreign Languages. During her 25-year Russian career, Dr. Smirnova was known for her work in innovative approaches to teaching.

Beyond the seventy books and other publications based upon her work back in Russia, Dr. Smirnova has written for and presented to a growing list of professional audiences in the U.S. and abroad. She has conducted numerous workshops and presentations on Web 2.0 "Read-Write-Create" technologies, including Moodle and Smartboard training on line and in colleges, public schools and conferences in the U.S. and Mexico. This summer she presented virtually at the Association for the Advancement of Computing conference in Hawaii in June and in person at the International Association of Technology, Education and Development **EDULearn09** conference in Barcelona in July, where she also chaired a session.