



WFS Learning Section
Bulletin
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FUTUREtakes publishes the *WFS Learning Section Bulletin* by special arrangement with the World Future Society (WFS) Learning Section Steering Team. Issues of the *WFS Learning Section Bulletin* typically include foresight education exercises, an educator spotlight column, and synopses of the annual WFS Education Summit.

Synopsis!

WFS Education Summit 2008

More than 60 educators participated in the recent WFS-sponsored Education Summit which featured the perspectives of college faculty, a school superintendent, and four student participants in online education programs. The pervasive themes throughout the summit were threefold – the desired objectives of future studies, the need for next steps beyond “one-size-fits-all” educational frameworks, and the ways to implement transformational change. Other topics extended from predictability to online education, community colleges, charter schools, and adjunct faculty, even extending to present-day factory model schools and their possible successors.

Global Online Learning Pioneers



Ted M. Kahn, Ph.D. (Panel Chair & Organizer). Co-Founder and CEO, Design Worlds for Learning; Chief Learning Officer, DesignWorlds for College & Careers, and Distinguished Visiting Scholar, Media X @ Stanford University (<http://www.designworlds.com> and <http://www.designworlds.com/college/>)

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Tiffany Chan, graduate of Stanford Educational Program for Gifted Youth (EPGY) Online High School (Stanford OHS: <http://epgy.stanford.edu/ohs/>) and freshman, University of Rochester

Aaron Kahn, graduate of Stanford OHS and freshman, McGill University, Montreal



Max Marmer, senior, Lick-Wilmerding High School (<http://www.lwhs.org>), San Francisco, CA, and Student Intern, Institute for the Future, Palo Alto (<http://www.iff.org>)

Virtual Stanford OHS student contributors:

Russell Coniff, former student at Stanford OHS and freshman, St. Johns University, Santa Fe
Harper Robertson, Senior, Stanford OHS
Jake Schepps, Senior, Stanford OHS

Leading the day's presentations was a student panel chaired by Dr. Ted Kahn of DesignWorlds for Learning, Inc. & DesignWorlds for College – and a parent of a student panelist and Stanford University's Online High School (OHS) graduate, Aaron Kahn. Stanford OHS (<http://epgy.stanford.edu/ohs/>) was born from Stanford's Educational Program for Gifted Youth (EPGY: <http://epgy.stanford.edu>). Dr. Kahn presented several advantages of online education that he has observed, including the increased retention of knowledge, the improved efficiency (less time needed to absorb information), the more favorable teacher-student ratio, Web and online mechanisms to share the best instructional content and student interactions, and the reduction (or even elimination) of a typical disciplinary role of the high school teacher – as well as the elimination of the artificial grade/age distinction. In addition, Kahn noted that some online education (e.g., OHS) can be more learner-centered, focusing on the differential needs of students, and can engage more participation from students (especially those who may tend to not be verbal participants in traditional high school classrooms), encouraging them to focus on key 21st century knowledge economy questions (knowledge – what, how, when, where, who, and why), as well as the “what if” (foresight, alternative consequences/scenarios) questions that are so essential in preparing students for the future. An added advantage, he added, is that this kind of online education enables students to spend more time finding mentors to complement their formal education, in addition to enabling great teachers to really engage students in critical inquiry and discussion.

Turning to implementation issues, Kahn indicated that the media can vary as needed – for example, a shared whiteboard, a microphone and video Webcam, or real-time chat services. He further noted that synchronous connectivity (real-time, even with students in different time zones) is useful for some activities, such as brainstorming and live discussion, while asynchronous connectivity (anytime, different locations) is more useful for other purposes.

Not content to share just his own observations, Kahn invited the panelists, some of

whom were themselves Stanford OHS student participants (Aaron Kahn, Tiffany Chan and via a proxy presentation, Russell Coniff), to share their reactions and reflections. Key OHS student observations about the online experience included: the potential to unleash creativity, consider real world application and integration, and support cross-cultural education (for example, via interaction with high school students from different socioeconomic, geographic, and ethnic backgrounds), which in turn, can support improved global understanding and promote world peace and harmony. All student panelists, including Max Marmer, added that online learning also needs to be complemented by real world learning experiences and applications of knowledge (e.g., John Dewey's "knowing and learning by doing") and the development of social and emotional intelligence to identify and use workarounds to overcome formal barriers to success. OHS student graduates Aaron Kahn and Tiffany Chan noted that online education was a welcome departure from the "one-size-fits-all" focus on standardized tests and grade point average (GPA)/class rankings as numerical-only measures of achievement and success, and that some of their most valuable learning experiences (often socially-based) have been outside the online classroom. High school senior Max Marmer, as well as Neerja Raman, longtime technologist and researcher at Hewlett Packard and now a Research Fellow at Stanford University, further noted that an increasing number of employers value virtual collaborative capability and creativity, regarding these as essential as (or even sometimes more important than) the traditional "3Rs" (reading, 'riting, and 'rithmetic).

One student even pointed out through online education, one "learns how to learn" – an increasingly vital life skill in the global knowledge economy considering that more than 80% of the jobs that today's students will have in the 21st Century do not yet even exist today. Marmer also emphasized a very different, but complementary, view about the importance of technology in high school education – not just as a medium for delivery of content or students taking courses online, but for students to learn how to design and integrate multiple kinds of technologies into offline as well as online learning. His specific examples included using the Web to research and find innovative people and projects in colleges, universities and industry in other places around the world – and to find ways to bring these innovations and new technologies directly into the high school environment. Marmer and Raman both focused on the importance of developing and applying foresight, as well as social entrepreneurship, as other key 21st century lifeskills, and Raman especially highlighted how effective practices in virtual collaboration in industry and research should be made available to students from all backgrounds, especially those from economically disadvantaged environments around the world.

However, the OHS student panelists were also quick to note some of the disadvantages of "clicks" as a substitute for "bricks," not the least of which was the lack of a real social life in being able to meet informally and "hang out" with other students. (In fairness, it was pointed out that in a typical large American public high school, it is difficult for a student to interact with – or even know – more than even one-fourth of his/her classmates.) One student, with avid interest in writing, poetry, and music, went further, noting that a real social life sparks creative outlets and that he had missed during his past year. For Tiffany Chan, a Hong Kong resident and OHS graduate, the challenge was much greater, as the OHS synchronous online class schedules imposed a nocturnal schedule on her that tended to isolate her from her own Hong Kong peers.

To provide the face-to-face dimension, the panelists proposed that schools provide more structured gatherings, such as educational trips, summer labs, and extracurricular activities. Also proposed was an online environment to maintain learning as a social process, an online

school library, and unstructured time away from the subject matter.

Q&A

- Q: Is there increased instructor burnout from need to be available and responsive 24x7?
- A: Yes. This can be stressing and tend to overwork the teachers. Timely feedback requires a high energy investment. However, teachers have enjoyed dedicating their attention to small numbers of students.
- Q: What are the admissions criteria for students coming into the program?
- A: The application process for EPGY is more rigorous, as it requires several essays in addition to test scores (Note: one student mentioned the admission application for OHS was as rigorous as many college applications). Even so, the process is not as limiting as one may think, as learning potential is important, not just test scores or previous GPA.
- Q: What is the cost of the Stanford OHS online education program?
- A: \$12,000 for full time students, but this is less than the cost of prep schools in New England. There are also arrangements that combine part-time participation with high school attendance, and thanks to a major grant to OHS, many OHS students are on partial or even full scholarships.
- Q: How has your online education program impacted your social life?
- A: [Tiffany Chan]: It has put me into a nocturnal pattern, as I lived in Hong Kong while participating in a US online education program. This limited my social interaction with my geographic peers and gave me a feeling of being alone.
- A: [Aaron Kahn] I had a text-oriented social life, that is, online chat... There were some get-togethers, but dating was difficult.
- Q: Do you think that this (online learning) is the education of the future?
- A: We need to continue what is valuable in both the real and the virtual worlds. People in the professional community want to be involved in education but there is no low-commitment way to do this. We offer college prep courses. Still there are challenges in transferring credits
- Q: Will you be disappointed going to a traditional college setting?
- A: [a student panelist] No.
- Q: Will there emerge a combination high school and early college program? What happens when this model is exposed to the world, that is, increased in scope beyond gifted students?
- A: Online education is potentially scalable, and the technology has exhibited this behavior. However, the teachers need financial compensation. Also wanted is a system that is more focused on succeeding in life than on test scores. High schools and colleges need to be brought together.
- A: Online education provides intrinsic motivation, as opposed to extrinsic.
- A: Some people learn best from books, and some people learn differently. High schools should be tailored for different motivations and interests. An additional challenge is knowing who is really gifted – and redefining and finding better ways to identify different forms of “giftedness” and what psychologist/Tufts University Dean of Arts & Sciences, Dr Robert Sternberg, calls “successful intelligence” (analytic, creative, and practical, as well as wisdom)!
- A: Online education is more difficult to implement, but the rewards are greater, too.
- C: There are possibilities to work with the Millennium Project’s Futures Essay Program, Future Problem Solvers, and the Oracle Education Foundation’s Think.com and ThinkQuest programs (<http://www.thinkquest.org/en/>).

Some Suggested Priorities for Futurists in the Classroom



John Smart, President, Accelerating Studies Foundation

This panel was followed by John Smart, who identified fundamental questions that foresight studies should explore as well as practical implementation considerations. Beginning with the observation that Tamkang University, Taiwan requires a course in future studies as part of its general education curriculum, Smart noted that there are presently ten academic programs in future studies – the others being in the US, Israel, and some of the Scandinavian countries. A key point in Smart’s presentation was that future studies should address basic fundamental questions – for example:

- What are the developmental forces and evolutionary choices?
- What is predictable? What is intrinsically unpredictable?
- What long-range forces act on complex systems besides natural selection?
- Does history have directionality?

In addition, Smart proposed that studies of the future encompass three key areas:

- Future studies – evolutionary changes, the possible, scenarios, alternative futures
- Developmental studies – irreversible changes or “phase changes”
- Acceleration studies – exponential change, positive feedback loops, self-catalyzing processes

Turning his attention to practical matters and recognizing the challenges inherent in establishing futures studies programs, Smart identified several possible allies:

- Businesses, particularly their innovation departments
- Entrepreneurs
- Alumni centers (which provide a mechanism for interested alumni to become involved)
- Libraries
- Computer centers
- Vocational, technological, and industrial arts departments
- Faculty (speeches, by topics)
- Career services centers

Smart noted that at present, very few undergraduates use their career placement services more than one month prior to graduation, even for summer internships.

Continuing, Smart identified a cognitive diversity assessment that can help students identify their strengths, and as a student exercise, he proposed that students write their obituaries (or for those who don’t like to think in terms of death, their 90-year roasts).

Designing the Future of Education

Irene Brock, Partner, FuturEd, LLC

Irene Brock’s presentation identified a key underlying model and hidden assumption for many schools – the factory model. Patterned after the same industrial-era factories for which they produced workers, factory



model schools are mass focused, “one-size-fits-all,” and controlling behavior is substantially more important than student learning, observed Brock, adding that both factories and schools rely on extrinsic motivators including competition. Grade progression mirrors the assembly line, while rote learning is a reflection of repetitive tasks in factories. Furthermore, most schools continue to compartmentalize in terms of subject areas and grade levels, and departments often do not talk with one another.

Continuing, Brock noted that 90% of all mental tasks in schools are at the knowledge level (regurgitation of facts) and the comprehension level (understanding the concepts but not necessarily being able to apply them), rarely extending to higher levels of thought complexity as described in Bloom’s taxonomy. For marginal performers, the system offers only the “either-or” decision – specifically, to advance them to the next grade or retain them in their present one – and both are counterproductive. Although educators are aware of the problems, the system does not let them implement constructive changes, she added.

As a way forward, Brock proposed reversing the time/learning relationship. Presently, time is the independent variable, as evidenced by the school calendar including the six-week grading periods that are common in the US. As an alternative, learning should be the independent variable and time the dependent variable, with each student progressing according to his/her own talents, interests, and internal time clock. Global age education calls for creative thinking and an otherwise full range of thinking skills applied in multiple contexts as the factory assembly line increasingly gives way to customization and to nonlinear integrated development, envisions Brock.

“The brain requires social contact for learning,” said Brock, echoing the experiences of Ted Kahn’s student panelists. Learning is both conscious and unconscious, and it involves both focused attention and peripheral perception, she continued, adding that the brain processes parts and wholes simultaneously. In the global age, both learning and work need to be challenging, meaningful, and invigorating. “Each brain is uniquely organized,” emphasized Brock, adding that above all is the need for a student to know himself/herself and how to learn.

Teaching Futures and Futures Education

Steve Steele, Professor of Future Studies, Institute for the Future at Anne Arundel Community College (IF@AACC)



Peter Bishop, President, Strategic Foresight and Development and Professor, University of Houston

Dennis Peterson, Superintendent, Minnetonka School District





Art Shostak, Professor Emeritus of Sociology, Drexel University

Representing a community college perspective, Professor Steve Steele, Institute for the Future at Anne Arundel Community College, pointed out that high schools and community colleges (1,300 in the US) can act locally and are less constrained by tradition than are universities. Neither K-12 nor the publish or perish environment, they are freer to innovate, he observed, adding that students are looking for something different in their educational experiences. Even so, questions such as “Where’s my classroom?” and “Where’s my textbook?” continue to reflect thinking that is engrained in the academic community, and even community colleges tend to institutionalize, Steele continued, and they need to create alternatives. Steele suggested using uncommon pathways in support of future studies, for example, using art to represent how Annapolis may be in the year 2060.

Turning to long-range objectives, Steele asked the provocative question, “What do we want students to have when they finish a futures course? For example, should they be equally prepared to deal with the future as with the present and past?”

Addressing the same themes of long-range objectives and ways to achieve them, Professor Peter Bishop began with observations on leadership. Leaders promote transformational change through vision and persistence and by being courageous enough to challenge mainstream thinking.

Observing that social change is underrepresented in sociology books, Bishop suggested increased emphasis on social statics (that is, how a society stays together) and social dynamics (how a society changes). Curricula should also focus on three futures – the expected future (“What is going to happen?”), the alternative futures (“What might happen instead?”) and the preferred future (“What do you want to happen?”)

To implement the vision, Bishop further suggested that future studies be included in every course. For example, mathematics courses can relate future studies to time series, extrapolation, probabilities, preference ranking, and criteria weighting, whereas history courses can focus on flow, changes over time, patterns, contingencies, alternative histories, historical images of the future, and historical analogy. For literature courses, the connection is through fiction including science fiction and through conditions and characteristics. Language studies offer the future tense and the subjunctive mode, and courses in the physical sciences can include material on technology applications and social consequences. To this end, Bishop suggested working through teachers’ professional organizations.

Concurrent actions proposed by Bishop include a requirement for more futures courses at all levels as well as development of a resource database. He is presently developing the Foresight Education Project that will help educators to include future studies material in existing courses and to develop stand-alone courses. He has developed a Website (<http://foresighteducation.org>) to gather futures material that has already been taught to be used by teachers who are beginning their careers as futures educators. Individuals can contribute material to the Website by sending it to foresighteducation@uh.edu. The Project will also

support teachers through email, telephone and personal visits. Eventually the Project hopes to change curriculum standards in both secondary and higher education.

During the discussion that followed, the compelling if ephemeral interest in the future among many people was emphasized. For example, voters choose between two or more visions of the future and some students choose careers based on anticipated career paths.

At this point, the perspectives came full circle with the presentation by Dennis Peterson, a school superintendent for 39 years. Echoing observations from earlier presentations on the difficulties in achieving transformational change, Peterson noted the tendency of school boards to balance educational needs with political interests, not the least of which is keeping taxes as low as possible. An additional challenge is that for a transformational school administrator, tenure does not exist, and he/she is not likely to remain in office much beyond the initial change.

Compounding the challenge is the fact that technology “re-wires” the way in which students think and respond but many faculty and administrators have little experience with the technology. Furthermore, centralized planning (most recently, “no child left behind”) is an approach that failed in the Soviet Union, continued Peterson.

To implement transformational change, it is essential to bring the community with you, he summarized, adding that students are driven by the need for social connections.

Q&A

- Q: How have you implemented transformational change?
- A: I don't do it. I get other people interested in the same changes.
- Q: How have you developed support from the public?
- A: Our approach has been to start with small steps that lead to positive but observable changes.

In terms of visions and needs, Professor Art Shostak asked how we can accelerate knowledge acquisition in our society, adding that we need to add the craft of imagination and think holistically about education reform. In posing this question, Shostak spoke in terms of a “4P model” of futures – the probable, the possible, the preferable, and the preventable – as a possible variant of Professor Bishop's three futures.

Observing that people are hard-wired to speculate about tomorrow, Shostak suggested that a “one size fits all” is an insult to the diversity that nature created. He added that in the US, 58% of Caucasians are relatively satisfied with their schools in contrast with 42% among other ethnic groups.

Echoing Peterson's comment that school boards are elected to keep taxes down, Shostak pointed out that charter school involvement gives us alternative models that we need to consider. In analogy with states in the US being laboratories for democracy, charter schools are laboratories for education.

- As further steps, Shostak proposed several courses of action
- Enrolling in Friends of the Future
 - Meeting with local superintendents and principals
 - Writing letters to the editor (newspapers)

- Offering subscriptions to *The Futurist*
- Offering to mentor a futures class
- Speaking
- Helping raise money so that more teachers can attend the WFS conference
- Urging the school system to sponsor futures fairs analogous to science fairs and focused on the “4P” futures

He further suggested that roof gardens and energy-friendly schools can be indicative of “walking the talk.”

To support transformational change in education, Shostak suggested several resources including *Edutopia* (a must read, he emphasized), *Rethinking Schools* (in his view, awesome), *Vision 2021* (K-12 focused), *Converge*, and *Future Survey*.

Teaching Futures and Futures Education

David Pearce Snyder, President, Snyder Family Enterprises



David Pearce Snyder, a consulting futurist, brought the Education Summit full circle as he discussed the confluence of IT, demographic trends, and energy costs and the implications for the faculty of the future. With many baby boomers retiring, and also considering the baby bust that followed the boomers, there are not enough college professors to meet the demands of increasing college enrollment – itself partly a result of the baby boom echo, argued Snyder. Even beyond the education profession, he continued, the US is experiencing a labor shortage and will need to import workers or export jobs.

At the same time, energy consuming schools are not sustainable, observed Snyder, adding that four-day school weeks are becoming more attractive so that fuel costs can be reduced. Asked Snyder, “What do we do on the fifth day? Can we get students to the local library?”

But an IT infrastructure exists, continued Snyder, and it costs 50% less than the present educational system. Additional benefits are 30% better retention and 40% less time consumption. The Internet is now a near-necessity of life, and there is a need for new learning skills including teamwork and problem solving. Technology will grow faster than traditional education systems can follow, predicts Snyder, and parents may someday tell teachers, “My kid knows more than you’re teaching him in sixth grade.”

With IT as the enabler, adjuncts may comprise most of the faculty in the future and serve as resources on line, envisions Snyder, adding that even with the shortage of K-12 teachers, public acceptance of adjuncts is for the moment an open question. Additional challenges include institutional resistance from full-time faculty and possibly from accrediting agencies, he continued, and presently there is no system to provide healthcare and other benefits.

Next Steps

At the conclusion of the Education Summit, participants were asked to identify what they want from the WFS Learning Section.

- Several participants identified the need for a compendium of available resources including course outlines and syllabi, in other words, “What can I use in class tomorrow”? Spearheaded by a few of the participants, compilation is now in progress.
- Also suggested was the possibility of a speakers’ bureau.
- FUTUREtakes agreed to launch an “Educator of the Quarter” column. Selections will be from among the ranks of leading professors and teachers in future studies as well as educators who are using innovative teaching methods of potential interest to futurists.

It was further suggested that increased international participation in developing course materials will enrich educators and students across the globe substantially.