DIRECTOR'S MESSAGE

Techno-Talent Development

Technology continues to transform our world including the field of education. Gifted students stand to benefit greatly from technology and are well suited to analyze and synthesize the massive amounts of data now at their fingertips. But, it is our responsibility to provide them with access and opportunities and equip them to use technology successfully on their talent development pathway.

In this issue of *Talent*, two of our colleagues at Northwestern University, Dr. Kemi Jona and Dr. Eric Calvert, share their expertise on technology and talent development. We also introduce you to relevant resources and trends. To truly capitalize on the possibilities that technology presents, however, we must act. We may need to:

- explore new teaching methods, even if we're good teachers currently getting great results.
- venture out and enroll our kids — and ourselves — in an online course.
- advocate for technology funds and policy changes.
- ask students to teach us their favorite game or app and share why they like it so much.
- ask what can we learn from the passion kids have for digital devices.

CTD is committed to staying at the forefront of gifted education, which means leading the way with technological advances.

Paula Olszewski-Kubilius

Online Learning:
A View from the Forefront

Online learning pushes the boundaries of a traditional school day and connects students who share a common interest. To understand and appreciate this powerful tool, CTD talked with Dr. Kemi Jona, a research professor of Learning Sciences and Computer Science at Northwestern University and director of the Office of STEM Education Partnerships; he played a key role in the development of CTD's online Gifted LearningLinks program.

Tell us about the advantages of online learning.

Online learning presents an important opportunity for personalized learning. This benefits all students, but gifted students, in particular, by allowing them to pursue their passions at a pace commensurate with their abilities. Students can move through material and be challenged at a level tailored exactly to their needs. Traditional classes, with one pace and depth for all students, compromises learning to a degree — even if all students in the course are gifted.

Another tremendous benefit to online courses, like those offered by CTD's Gifted LearningLinks, is the opportunity to take courses not normally available in schools. Students can take whole courses aligned with their interests and pursue them at a level beyond their grade level.

How can parents assess the quality of an online course?

Parents should look carefully at the course syllabus or speak to the course instructor. What kinds of personalized learning experiences are built into the course? How are those experiences complemented by opportunities for interaction with peers? There needs to be a mix, while not sacrificing the ability for each student to pursue his or her interests and talents at the optimal level.

What reservations do you hear?

Parents are typically concerned about a lack of interaction with the teacher. There is also a concern about motivation to keep up with coursework.

Contrary to many parents' beliefs, we've seen through our research that students actually have *greater* communication with teachers and peers in an online course format. This is especially true for students who are more socially reserved in a traditional classroom.

Teachers comment that the level of conversation on an online discussion board is often much higher than what takes place in a face-to-face classroom environment.

How can educators embrace the digital age?

Most educators who go into online teaching with the proper

Online Learning

support find that they enjoy the interaction with students and the opportunities to provide more individualized feedback.

One thing that helps ease the transition is blended learning, which mixes face-to-face instruction with an online component.

More than a decade ago, you co-wrote "Extracurriculars as the Curriculum: A Vision of Education for the 21st Century." Talk about your predictions and the ensuing progress.

While progress may have been slower than anticipated, I do believe that blended and online learning will come into the mainstream in the next three to five years. As class sizes have grown, the fallacy of the lockstep classroom model has come into focus.

We have yet to see, however, schools doing the serious rethinking of the role they should play if learning is to take place largely online or in a blended format. What is the unique value of bringing students together socially in one physical gathering spot?

Is there still a role for the little red schoolhouse?

Yes. In fact, the one-room schoolhouse model is actually closer to where I think we're headed, though with a lot more technology at play. I envision schools functioning more as learning laboratories that are open and flexibly designed rather than walled off. In a learning lab, students of different ages work on different projects, and teachers facilitate, rather than direct.

The flipped classroom idea is getting traction because teachers realize that standing at the front of the room conveying knowledge isn't the most valuable thing they could be doing with their students. A video of a great teacher, viewed in chunks, is actually a much more effective way to convey knowledge in a student-centered, student-directed format. Time with the teacher can then be devoted to questions and activities.

Talk about the concept of personalized online learning.

We know from research that the best learning takes place in a more individualized environment. Technology is making personalized learning much more practical and feasible to implement. The more that parents of gifted students can do to convince schools to move toward a personalized, data-driven environment, the more all students will benefit. ●

Six Tasks for Technology in Talent Development

Technology's potential — like that of many gifted students — can go unnoticed.

This is the view of Eric Calvert, Outreach, Research, and Technology Coordinator for Northwestern University's Midwest Academic Talent Search (NUMATS). Calvert believes that gifted educators tend to focus on one role for technology: content delivery. This, he says, is selling technology short. Calvert identifies six ways in which technology's full potential can be realized.

1. Augment Natural Abilities

Technology can augment our abilities and extend our natural minds.

Special educators help students with disabilities participate in a regular curriculum through the use of supports that are becoming increasingly transparent by virtue of technology. If we are using technology to make more activities accessible to people with *dis*abilities, couldn't we use technology to also extend natural *abilities*?

We recognize certain physical and perceptual limitations as disabilities, but in reality we all have limitations. For example, in a given moment, our brains can only handle a few bits of information in working memory, but computers can help us process larger volumes of data to recognize patterns and relationships that would otherwise be beyond our comprehension. We can also use technology to enhance our senses and even add new ones.

2. Scaffold Learning

Technology can help mediate asynchronous development and scaffold learning more seamlessly and easily than ever before.

Young gifted students may get frustrated with stages of the creative process. In their minds, they have a very detailed and clear picture of the product that they want to create, but they may not have developed the fine motor coordination to translate the idea into reality.

Garage Band is a great example of technology that addresses this issue. Beginning musicians are able to pull up a virtual instrument and improvise a tune or melody. The app captures the audio and converts it to sheet music.

In the analog world, you would often need years of training and practice before you could start composing. With Garage Band, you can do that on the first day. Scaffolding is built in and provides natural motivation to do more and more on your own.

3. Foster Non-Cognitive Talent Development

While cognitive and academic abilities matter, certain attitudes and practices are integral to talent development. Technology can be used to foster persistence, self-discipline and an ability to learn from failure.

For example, technology games can fully

Blogs. Apps. Facebook. Wikis. Twitter. More.

With new technologies constantly changing the education landscape, it is hard to keep pace. Using the New Media Consortium's K–12 Horizon Report and other sources such as those listed at the end of this issue, one can keep an eye on emerging trends in technology and gifted education. Here is an overview of some key technology concepts gaining traction in gifted education today:

• **Augmented Reality:** By layering virtual reality on top of physical reality and adding interactivity, augmented reality fosters an expanded view of the world and promotes a continually growing understanding of it.

• **Blended learning:** Blended learning is what its name implies — a mix of face-to-face and online learning.

• **Cloud Computing:** Learning and collaboration take place anytime, anyplace and from any device when accessing programs and services in the cloud (Internet).

• **Digital Identity:** Each student is able to create a single, secure digital identity that can be used anyplace a login is required to access a website or service. Digital identity will facilitate curriculum personalization by profiling learners' interests based on their content consumption.

• **Flipped classrooms:** In a flipped classroom, students receive instruction online outside of class and use class time for active learning facilitated by a teacher.

• **Game-based Learning:** By integrating games and game mechanics with educational experiences, game-based learning can stimulate advanced problem-solving, creativity, strategic thinking and team-building.

• **Personal learning environments (PLE):** Using these online spaces for making learning connections, students can organize all forms of media about a topic. A PLE serves as a powerful information warehouse and reflection venue.

Additional Reading

Visit www.ctd.northwestern.edu/resources/pubs/winter13talent/#additionalreading for links to resources on technology and gifted education. ●
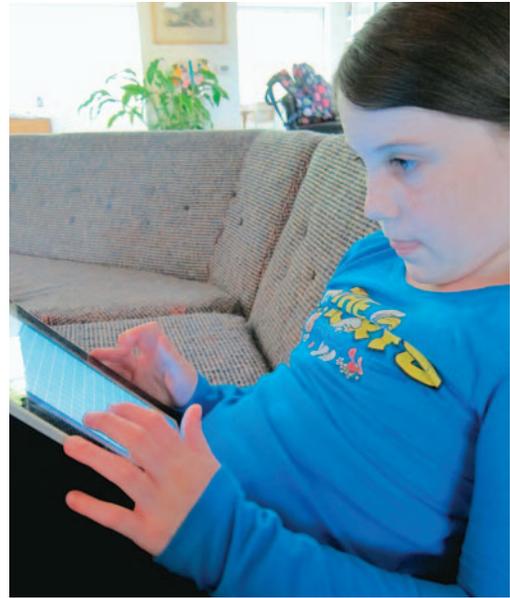
engage students in accomplishing objectives. The same elements that encourage students to master game challenges can be used to motivate and help them chart their progress on problems and skills in the real world. Smart phone apps that help people set goals and track information related to eating and exercise are popular. We can apply the same principles to set and track progress toward learning goals.

4. Provide 24/7 Mentors

Networking platforms can be valuable in connecting students that have similar interests and interfacing with mentors around the world.

To take advantage of these support networks educators and parents must rethink some assumptions about access to social media.

5. Motivate Students to Achieve

Just as gifted education can learn from special education's use of technology, we can also learn from the athletic arena's use of it as a motivator. Products like Nike Fit, which is geared toward runners or cyclists, help you set a goal and track your progress. Knowing you've climbed nearly 1,500 feet on a stairclimber is fine, but it is more impactful to know you've climbed the height of the Empire State Building.

6. Create Smarter Communities

An outcome of talent development has always been that gifted kids, as adults, would do good things for the world. Technology has accelerated that possibility. Students can now get involved in communities and make real contributions at a young age.

These days, we all live in a cloud! If you know students motivated to dream big and connect with peers from around the world, encourage them to power up with online courses.

Designing phone apps • Analyzing international politics Investigating neurological disorders

These are just some of the challenges bright young scholars are exploring in online courses through **CTD's Gifted LearningLinks.** GLL offers enrichment, honors and Advanced Placement® courses for talented students in kindergarten through grade 12. And if we don't offer the subject your student is passionate about, we'll pair him or her with an online mentor for Independent Study.

See you online!

The Internet is designed to be a two-way medium: you benefit from what other people have created, and you give back. We need to encourage our brightest students to share their creative ideas, help them communicate and refine those ideas. ●

Center for Talent DEVELOPMENT®

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NEWS, DATES & OTHER IMPORTANT CTD INFORMATION

FREE CTD Seminar for Parents!
**February 18, 6:30 – 8 p.m.,
Northwestern University, Evanston, IL
Parenting Your Twice–Exceptional Child:
Developing Talent and Accommodating
Needs.** Megan Foley Nicpon, PhD.
www.ctd.northwestern.edu/outreach/
parentseminar

**Northwestern University's Midwest
Academic Talent Search (NUMATS)**
provides research-based assessments to
identify exceptional academic ability and
tailored resources.
For spring tests, **register by:**
March 5 to take ACT® on April 13 (gr. 6–9)
April 2 to take SAT® on May 4 (gr. 6–9)

The Summer Program offers life-changing
academic adventures that allow gifted
students in PreK through grade 12 to delve
into a subject of intrigue, build upon their
strengths and connect with peers. Resi-
dential and commuter options available.
Seven program sites in the Chicago area.
Applications now accepted.

The Civic Education Project combines
service-learning with study and reflection.
Students in grades 7-12 engage with social
issues first hand. Sessions are held in major
urban sites across the country. Applications
now accepted for Spring and Summer.

Gifted LearningLinks (GLL) offers rigorous
online courses for all ages. Credit bearing
Honors, Honors Elective and AP® courses
begin on the 15th of every month. Nine-
week spring session of enrichment courses
for students in K through grade 8 starts on
April 1.

Weekend Enrichment Programs engage
students age 4 through grade 9 in hands-
on, in-depth activities. The wide variety of
advanced courses range in duration from a
single weekend to consecutive Saturdays.
The Saturday Enrichment Program Spring
Session begins on April 13 in locations
throughout the Chicago area.

**CTD's 2013 Opportunities for the Future
Conference for Gifted Students and
Their Families**, June 29, 2013 in Evanston,
IL. www.ctd.northwestern.edu/ctd/
outreach/familyconference ●

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Center for Talent Development has been
accredited as a nonpublic supplementary school
by the North Central Association Commission on
Accreditation and School Improvement (NCA
CASI) since April 1, 1994. NCA CASI is recognized
by the U.S. Department of Education and has
more than 100 years of experience in improving
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