Demonstrating the Possibilities:
University of Wyoming ECHO in Assistive Technology is Building Capacity and Showing Positive Outcomes in Wyoming and Beyond

In the last issue of Closing the Gap Solutions, we described University of Wyoming ECHO in Assistive Technology (UW ECHO in AT), an innovative approach to building professional capacity in assistive technology in order to improve student outcomes. UW ECHO in AT employs a novel approach to professional development and capacity building by creating a virtual knowledge-sharing network of hub and spokes. We link a “hub” of multidisciplinary specialists with educator, administrator and service provider school “spokes” for weekly video conference mentoring through didactic training and student case discussions. This guided-practice model exponentially increases workforce capacity for providing students with assistive technology to ultimately reduce inconsistencies in student achievement.

UW ECHO in AT can be better understood, as shown in Graphic 1 below. In this second article, we discuss our hub and spoke participants, UW ECHO in AT’s fidelity to the Project ECHO model, the findings from the external evaluation of our year-long pilot study, the expansion of UW ECHO in AT and UW ECHO networks for other applications in education, and the growing number of our partners from within and outside Wyoming.

The UW ECHO in AT multidisciplinary hub team of experts includes faculty and staff from the University of Wyoming, as well as a number of other specialists who connect remotely from locations throughout the state and nation. This professional development

---

**Graphic 1: University of Wyoming ECHO in Assistive Technology model.**

Students need access to curriculum and assistive technology will help.

There aren’t enough assistive technology experts to meet the needs of all students, especially students in rural schools.

UW ECHO in AT provides training and guides educators and service providers to consider, implement and evaluate assistive technology.

Students receive the appropriate assistive technology strategies at the right time and the right place.

---

**SANDRA ROOT-ELLEDGE, M.S.** is the associate director, and currently the interim director, of the Wyoming Institute for Disabilities where she directs the Wyoming Assistive Technology Resources and University of Wyoming ECHO in Assistive Technology programs among others.

**CANYON HARDESTY, M.S.** is the coordinator of community education for Wyoming Institute for Disabilities. She oversees programs, training and technical assistance related to health, education, early intervention, vision and assistive technology and has over 10 years of experience training in health and education.
core team includes assistive technology professionals, an audiologist, speech language pathologists, occupational therapists, physical therapists, an orientation and mobility specialist and vision and hearing specialists, along with nationally-recognized trainers and experts in assistive technology. The hub team members of this knowledge-sharing tele-mentoring network provide evidence-based assistive technology information within didactic training and student case discussions. Educators, administrators, service providers and, in some cases, the student and parents, learn in their local communities where they know and understand the school and resources. They receive mentoring to implement the case discussion recommendations that they want to try. While outcomes are measured, there is no expectation for participants to implement the recommendations offered by the hub team. However, for every case presented to date, recommendations have been implemented.

Participation in the project begins with an initial orientation session hosted by UW ECHO network faculty and staff. This initial session provides a virtual introduction to the core components of UW ECHO in AT, including video-conference and communications technology, an overview of the academic year’s didactic training schedule, case presentation and co-management forms and an understanding of the outcomes measurements for both participants and students. After having completed an orientation, participants can join weekly sessions offered throughout the academic year.

Experts, along with educators located at spoke sites, interact weekly to learn and share new and ever-evolving promising practices in assistive technology. Educators are provided with suggestions and guidance to apply new strategies for assistive technology assessments, interventions and evaluations. The multi-disciplinary hub team members do not assume responsibility for interventions with the students. Educators, through a guided practice model, retain responsibility for implementing the recommendations and strategies with students in their home schools and communities.

A secure, centralized database archives training and case presentation materials and allows continued learning for participants who are unable to attend every session. The database assists in monitoring UW ECHO in AT outcomes.

**OUTPUTS AND OUTCOMES**

Wyoming Institute for Disabilities applied the four core components of the Project ECHO model during the year-long study of UW ECHO in AT. During the pilot study, September 2014 through May 2015, UW ECHO in AT:

- Conducted 26 sessions for 186 registered participants
- Facilitated discussions of 28 new and 8 follow-up student case presentations during the sessions
- Provided 26 didactic trainings delivered by 13 different trainers
- Awarded 46.5 hours of continuing education credits

**Graphic 2: ECHO model components translated for use in education and for assistive technology.**

1. Technology to leverage scarce resources
   - Video conferencing technology
   - Accessibility features
   - Real-time captioning
   - Session material archived
   - iECHO database
   - Session video viewing

2. Didactic training on core professional development topics
   - Incentivized with professional credit (PTSB, ASHA, CCEU)
   - High incidence/timely topics
   - Assistive technology:
     - reading
     - writing
     - communication
     - organization
     - computer access

3. Case presentations and ongoing co-management
   - FERPA / HIPPA compliant
   - Standardized case presentations forms
   - Student centered
   - Strengths based
   - Family and support narrative
   - Co-management
   - Access to ongoing support by expert AT team
   - Priority assessments as needed

4. Outcome measurement
   - Model fidelity measures
   - Educator/Learner outcomes
   - Pre/post tests
   - Weekly session evaluation
   - Student outcomes
   - Progress toward IEP/504 goals
   - Improved transition outcomes
   - Assistive technology tried at 0, 4, 8, and 12 weeks

Increased capacity of local education agencies to improve academic outcomes of students with disabilities

1. Technology to leverage scarce resources
2. Didactic training on core professional development topics
3. Case presentations and ongoing co-management
4. Outcome measurement
Based upon the measures of the ECHO™ model identified by the University of New Mexico and through an evaluation of recorded sessions, we translated the model with fidelity. See Table 1 below.

An external evaluation of UW ECHO in AT was conducted by Data Drive Enterprises and a discussion of the results of that evaluation follows.

In June 2015, those individuals who had participated in UW ECHO in AT during the 2014-15 school year were asked to complete an online survey about their experiences with the project. Participants were sent multiple emails to encourage their response to this online survey. Of the 186 UW ECHO in AT registrants, 39 (21%) completed the evaluation survey.

This survey asked participants about their current job and assistive technology experiences, their assistive technology training needs and the impact UW ECHO in AT had on their knowledge and skills. Participants were asked to indicate their current assistive technology knowledge and skills (after having participated in UW ECHO in AT – the post-test measures) and were then asked to think back to before their participation in UW ECHO in AT (the pre-test measures) and rate their knowledge and skills as of that time. (Note: in the 2015-16 school year, participants will be asked about their skills and knowledge (pre-test) before they participate in UW ECHO in AT, and responses on the pre-test measure will be required before a participant gains access to the recorded sessions and archived material housed in the UW ECHO in AT database, iECHO).

Results indicated that respondents had a favorable review of the UW ECHO in AT project. Eighty-nine percent (89%) indicated that their assistive technology-related knowledge increased at least some; 85% said that their assistive technology-related skills increased at least some; and 83% stated that they would change what they did back on the job as a result of their participation in UW ECHO in AT.

An analysis of respondents’ post-test ratings compared to their pre-test ratings on 10 specific skill areas also showed favorable results; on all skill items within these skill areas, post-test ratings were higher than pre-test ratings. With this analysis, the percentage of respondents who rated their skills as “Beginning Application,” “Advanced Application” or “Mastery” on the pre-test items (before UW ECHO in AT participation) was compared to the percentage who chose these options on the post-test items (after UW ECHO in AT participation). Some of the largest increases in skills occurred on assistive technology skill area of reading. For example, 31% of respondents said that prior to their participation in UW ECHO in AT, they had at least the Beginning Application level of skill on the item “create and use

<table>
<thead>
<tr>
<th>Core Component</th>
<th>Elements</th>
<th>UW ECHO in AT Translation</th>
</tr>
</thead>
</table>
| Using technology to leverage scarce resources | Inter-professional hub and spokes  
Best available technology  
Synchronous  
Leveraging scarce resources  
Many ‘experts’ for one professional for one student to many | ✔ |
| Sharing best practices | Didactic curriculum | ✔ |
| Case-based learning, guided practice | Voluntary case-based presentations  
Use of templates for consistent case presentations  
Mentorship  
Regular, ongoing and frequent sessions  
Opportunity to develop long-term, community relationships | ✔ |
| Rigorous outcomes measurement | Use of the iECHO database to consistently track data  
HIPPA compliant measures  
FERPA compliant measures  
Use of a data feedback loop for ongoing improvement | ✔ |

Table 1: Measures of fidelity for translating or replicating the ECHO model.
Has your AT-related motivation increased?  
- Some: 19%  
- Quite a bit: 30%  
- A lot: 41%  
Total: 90%

Has your AT-related knowledge increased?  
- Some: 27%  
- Quite a bit: 38%  
- A lot: 24%  
Total: 89%

Has your AT-related skills increased?  
- Some: 32%  
- Quite a bit: 38%  
- A lot: 15%  
Total: 85%

Will you change what you do back at your job?  
- Some: 34%  
- Quite a bit: 29%  
- A lot: 20%  
Total: 83%

Graph 1: Participant reported increases in assistive technology motivation, knowledge, skills and intent to change what they will do in their job as a result of their participation in UW ECHO in AT.

Graph 2: Average reported gains in mastery of 10 assistive technology skill areas resulting from participation in UW ECHO in AT.
pictures with text to support reading”; whereas 77% stated they had at least a “Beginning Application” of this skill after their participation in UW ECHO in AT.

Another skill area that showed large increases from pre- to post- was writing. An example item from this skill area is “Understand and use tools to augment writing skills, such as word-prediction, macros and electronic word wall.” On this item, 31% of respondents said they had at least a Beginning Application of this skill before their participation in UW ECHO in AT; 56% stated they had at least a Beginning Application of this skill after their participation in UW ECHO in AT. The following graph shows the average gain from pre- to post-test items based on the 10 skill areas.

**NEXT STEPS: SUPERHUB AND ADDITIONAL HUBS**

The newest chapter of Project ECHO involves the creation of “superhubs,” which will play a critical role in increasing the number of regional hub centers. The University of Wyoming, Wyoming Institute for Disabilities was identified as one of just four initial superhubs – along with the American Academy of Pediatrics ECHO, ECHO Northern Ireland and ECHO India. The superhubs will launch projects creating access to address additional issues that range from specialized pediatric care to learning disabilities to mental health to palliative care. “We want to move knowledge, not patients, to mental health to palliative care. “We want to move knowledge, not patients, to mental health to palliative care.”

With the superhub designation, we will be offering training and technical assistance to other agencies interested in replicating the UW ECHO in AT model. We are receiving requests for guidance on how to replicate the assistive technology model in other states and for support to develop ECHO networks for other topics in education or related to disabilities.

Canyon Hardesty, UW ECHO in AT Project Manager, reports, “We are excited about the possibilities of the ECHO model to transform the way that we conduct meaningful and sustainable professional development to ensure highly-qualified and skilled professionals in our schools and educational communities.”

For more information, to contact us, or for more information about our February 22, 23 “All Roads Lead to ECHO” conference, please see [http://www.uwyo.edu/wind/echo/](http://www.uwyo.edu/wind/echo/) or email projectecho@uwyo.edu.

---

**GAYL BOWSER, UW ECHO in AT**

As a national special education consultant, I see daily evidence of the way that teamwork makes for better educational plans, better interventions and better outcomes for students with disabilities. It’s especially important to have a team when the educational question is focused on specialty areas like assistive technology. However, it’s sometimes hard to find a team with which to work.

Virtual teamwork is one of the aspects of the UW ECHO in AT project that I value the most. I love the fact that I can ask a question and get help from a variety of members of the UW ECHO in AT community. Even though we live in many towns and several different states, the UW in ECHO in AT community is becoming a very real and vibrant community of professionals. As we learn to collaborate at a distance, our collective knowledge and experience increases exponentially.

Research shows that when teachers collaborate, student achievement increases. UW ECHO in AT has made it possible to collaborate virtually and in new ways to improve outcomes for students with disabilities.

**GAYL BOWSER, UW ECHO in AT**

Lead Trainer and nationally recognized expert in the field of assistive technology.