

Effectiveness of Teacher Preparation for the Online Environment

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Online learning currently reaches millions of K-12 learners and its annual growth has been exponential. Industry has projected that this growth will likely continue and has the potential to lead to dramatic changes in the educational landscape. While online learning appears to hold great promise, civil rights legislation and policies—and their application—in online learning, as they pertain to students with disabilities, have been the subject of much less research than is necessary for appropriate policy planning and decision making. Researchers urgently need to develop shared understandings about how online learning affects students with disabilities as they participate in online learning environments, move through their coursework, and transition back to the brick-and-mortar classrooms (or out of school settings in general). Research that claims to focus on students with disabilities in online learning environments should be designed and carried out with particular attention to educational and social outcomes. The Center on Online Learning and Students with Disabilities (COLSD) conducts research in alignment with these goals.

COLSD, a cooperative agreement among the University of Kansas, the Center for Applied Special Technologies (CAST), and the National Association of State Directors of Special Education (NASDSE), is focused on four main goals:

1. To identify and verify trends and issues related to the participation of students with disabilities in K-12 online learning in a range of forms and contexts, such as full or part time, fully online schools, blended or hybrid instruction consisting of both traditional and online instruction, and single online courses;
2. To identify and describe major potential positive outcomes and barriers to participation in online learning for students with disabilities;
3. To identify and develop promising approaches for increasing the accessibility and positive learning outcomes of online learning for students with disabilities; and
4. To test the feasibility, usability, and potential effectiveness of as many of these approaches as would be practical.

To meet the first two goals, COLSD has conducted a number of activities designed to develop understandings about the general status of students with disabilities in online learning. Exploratory research activities included case studies of two fully online schools; several national surveys of purposefully sampled parents, students, teachers, and district and state

administrators; interviews with members of individualized education program (IEP) teams; and a systematic review of one state's student participation, retention, and completion data. COLSD is making an additional effort to describe the landscape of online learning for students with disabilities through a series of forums with different stakeholder groups to obtain an in-depth view, from different perspectives, of the issues and concerns with students with disabilities in online learning. The first forum was held with state directors (or a designee) of special education to obtain the state policy perspective. The second forum was conducted with virtual school district superintendents and other top-level district administrators to obtain the practitioners' perspective. Findings from these forums indicated that views from industry vendors were important, therefore, the third forum was conducted with vendors who provide platforms or resources for use in online settings, or support fully online or blended environments with courses and instructors. The responses gained from the vendors are the topic of this paper.

Forum Participants

This third forum was held with online instructional vendor providers in a face-to-face gathering August 11-12, 2015. Descriptions of the vendors and participant responsibilities appear below. A list of participants (Appendix A) and the forum agenda (Appendix B) are also included in this report. The participating vendors were chosen because they: (1) have status as an organization with a national presence; (2) have been involved in K-12 teaching and learning support strategies, research, and product development in online learning environments for at least 10 years; (3) represent different segments of online learning (e.g., supplemental instruction, fully online programs, and learner management systems) and; (4) provide a variety of supports and products to states, districts, and schools (public and charter) engaged in fully online and blended learning settings. Although the experiences and information garnered from the participants do not represent all vendors in the industry, they do provide an informed sample.

The first vendor, Agilix Labs, founded in 2000, included two administrator participants, the Vice President (VP) of Innovation and VP for Strategic Partnerships. Agilix provides support for personalized online learning through Buzz, a customizable platform, and offers BrainHoney!, a learning management system (LMS). The VP for Innovation examines innovative industry practices to determine how to support and promote them and how to use existing technology for effective innovations to improve teaching and learning outcomes. The work of the VP for Strategic Partnerships includes helping interpret accessibility requirements with such entities as state technology directors, Council of Chief State School Officers, and other industry vendors.

The Senior Director for Student Services represented the second vendor, Connections Education, which has been supporting online schools since 2002. Connections Education is an accredited provider of virtual education in charter and blended schools to K-12 students. As of the 2015-2016 school year, Connections Education supports charter schools in 26 states and seven blended schools in Indiana, Michigan, and Ohio by offering courses, LMS, and instructors as needed. The Senior Director supports fully online schools in which they serve about 6,000

students with a variety of disabilities such as learning disabilities, emotional and behavioral disabilities, and cognitive, motor, and sensory disabilities.

The third vendor, D2L Corporation, founded in 1999, designated the Product Design Manager as the forum participant. D2L offers Brightspace, a LMS, to its K-12 and higher education clients that represent statewide consortia to individual schools. The Product Design Manager's focus includes improving technological accessibility, resulting in two gold level awards (2010 and 2011) from the National Federation of the Blind Nonvisual Accessibility, a leading advocate for Internet access by blind Americans. The Product Design Manager is now increasing focus on personal and classroom accommodations using the Universal Design for Learning framework.

The Director of Research from Edgenuity Inc., a 16-year vendor, was the fourth participant in the forum. Edgenuity creates content in the form of secondary level core, elective, and Career and Technology Education courses. Edgenuity offers supplemental instruction, courses for credit recovery, and is beginning to offer Tier 2 type interventions. The Director of Research conducts studies with districts partnering with Edgenuity to determine the accessibility and effectiveness of the courses and how to improve the course features to impact student learning.

Knovation, helping districts meet the needs of diverse learners for 15 years, sent their Chief Academic Officer (CAO) to participate in the forum. Knovation offers solutions and services centered on its collection of over 360,000 professionally-evaluated, standards-aligned digital learning resources. Knovation's products include netTrekker (find and share digital resources from its collection) and icurio (use digital resources from its collection to design and deliver digital lessons). The CAO works with industry organizations to research and share ideas supporting online learning and has formed a volunteer workgroup to advance UDL with vendors as they create or curate products to support online learning.

The sixth and final vendor Texthelp, founded in 1996, sent their Vice President of Professional Solutions to participate. Texthelp began by supporting reading and writing for people with communication and physical disability issues and are expanding their work to support all learners—including English language learners—through their literacy software. The VP licenses Texthelp software to publishers and large software developers and ensures their software can be accessed on any device, on any platform, so the software can be integrated into mainstream technology for classroom and home use for all learners. Most of their work supports districts and K-12 schools (90%), but they also support individuals, higher education, and government agencies with youth and adults struggling with reading, writing, and communicating.

Forum Topics

COLSD staff reviewed previous literature, revisited findings from previous research activities (e.g., case studies, surveys, and interviews), and evaluated responses from the first two forums to determine the topics for this third forum. As with the previous forums, the

population under consideration consisted of students with disabilities. Therefore, the responses reported are always in the context of meeting the needs of students with disabilities in online learning environments. The 10 topics covered at this forum included:

1. Enrollment, persistence, progress, and achievement
2. Parents' preparation and involvement in their child's online experience
3. IDEA principles in the online environment (e.g., free and appropriate public education, least restrictive environment, due process protections)
4. Effectiveness of teacher preparation in the blended and online learning environment and promising (or negative) practices that facilitate (or negate) professional development
5. Schools and vendors as data collectors and users; effective and efficient access, sharing, integration, and instructional usage of student usage data (e.g. performance scores, clickstream, pages accessed, etc.)
6. Addressing privacy concerns: Vendor access and use of school and student information
7. Integration of universal design for learning (UDL) into courses (e.g. options for how information is presented, the ways in which students can demonstrate mastery, supports for engagement)
8. Instructional practices: Integration of optimal evidence-based practices
9. Availability of students' strategy instruction in online environments (e.g. selection, monitoring prompts for strategy use that support student learning as in reading comprehension or memory strategies)
10. Supervision for online learning in general education and, in particular, for supervision in special education

Prior to the meeting, participants received a packet of materials including the agenda (see Appendix B) and a list of the topics and questions to be considered. The forum began with introductions and a discussion of the importance of considering students with disabilities in the context of online learning. Each vendor then responded to a set of questions about the selected 10 topics. The format of the meeting was framed as a conversation in which participants were encouraged to elaborate, explain, and engage in uptake with one another's comments. Representatives from COLSD moderated the discussions to provide all participants with comparable opportunities to share insights about each topic. Participants responded to three questions (see below) for all 10 topics, and an additional 2-5 questions relevant to each particular topic:

1. How is your organization currently addressing this topic?
2. What is working well for you on this topic?
3. What is the top challenge you face and the direction you see your organization taking on this topic?

The discussion questions serve as the headings in the following text.

Effectiveness of Teacher Preparation in the Online Environment

This fourth vendor forum topic summarizes the perceptions of vendors regarding how teachers are prepared for teaching in online settings. Very little research has focused on

preparing teachers to work with students in online settings (Greer, Rice, & Dykman, 2014), with initial research indicating that teachers do not receive sufficient preparation in how to provide the majority of instruction via the Internet (Carter & Rice, 2015; Rice & Mellard, 2015). This shortcoming is noteworthy since teaching students without sharing physical space introduces new complexities and necessitating preparation that is different from regular teacher preparation. Some of these differences include the fact that online teachers often spend more time monitoring student performance and are available longer hours for their students and families (Carter & Rice, 2015; Greer, Rice, & Carter, 2015; Rice & Carter, 2015a). Importantly, Rice and Carter, 2015b) found that online teachers feel strongly about the need for steady and positive relationships with their students even though their contact with them is very different than in traditional schools.

The virtual school superintendents and administrators also reported in a Center forum (Rice, East & Mellard, 2015) that they were often impressed with online teachers' desire to build positive student relationships. These forum participants also indicated that they must offer professional development to their teachers because the teachers do not come prepared from their preservice programs ready for the differences involved in teaching in the online environment.

State Education Directors of Special Education, in another forum that the Center conducted (Franklin, Burdette, East & Mellard, 2015) reported that their state may add educational technology proficiencies to current teacher preparation and recertification requirements but admitted preparation specific to online instruction is limited. Limited resources keep states from fully addressing the issue of online teacher preparation but some states have published guidelines on how to enhance instructors' online teaching skills.

How important is this topic to your organization?

All vendors recognized the importance of effective teacher preparation in order to improve fidelity of implementing their materials or services and achieve the intended student outcomes. One vendor had heard from state chief academic officers and teachers that professional development for online settings was suffering and they had a lot of anxiety about the lack of effective professional development. Another vendor discussed the need for preparation to be focused on teachers' needs to make online instruction efficient and to be integrated as a part of teachers' normal workflow.

What is working well for your organization on this topic?

Each vendor discussed their professional development activities that either introduce teachers to their materials or platforms or deepen teachers' knowledge and skills in using their products or services. One vendor discussed the logical progression of their platform so they begin with basic instructions (e.g. using the discussion forum) and then they offer subsequent training on the in-depth features of the system. By offering progressive training the teachers do not get overwhelmed.

Two vendors discussed providing “just in time” support through job-embedded coaching. This type of training offers the vendor opportunities to move beyond training teachers to “click buttons” and instead support teachers’ understanding of how to integrate their course materials and resources into their online instruction. Coaching was offered in person, through trainer-facilitated online modules, as a stand-alone course, or as video modules.

The vendor that offers full-time online schooling offers peer-support to its teachers. For example, one of the vendor’s math teachers is a graduate of their full-time virtual schools so this teacher can offer support to her peers. She came through virtual schooling as a K-12 student and can offer insights from “both sides of the desk.” This example of peer support is viewed as a promising approach in the organization.

Two vendors that offer instructional platforms discussed that teachers appreciate training offered through the same instructional platform that the teachers are using. They do not have to learn a new system or go to an external system for their training and then they have access to the training resources and library of materials that grows over time and is embedded in their system. The vendors discussed that it is also helpful to have a group of lead teachers who help with collaborative development of the training to help keep the activities authentic and practical.

Some vendors discussed including professional development opportunities in how to use student data wisely and strategically. These opportunities would support the idea of helping K-12 students become more self-reliant and self-directed by using their own data to set goals. This opportunity would also help prepare teachers to work with those students who surge ahead of the others and how to create flexible grouping that rotates students through different groups as data indicate the students’ changing capabilities. This type of professional development is key for online setting management with diverse student communities and would help online teachers become comfortable with self-directed learning models.

What is the top challenge you face on this topic?

When thinking about the effectiveness of online teacher preparation, the vendors were able to discuss challenges they felt were impeding progress. One vendor talked about the desire for teachers to move beyond “how to enter grades” and get to the educational features such as embedding learning strategies for particular students. The participant noted that preparing teachers for the online environment takes time. The teachers need time and practice to learn and be able to apply all of the available features of a system to better take advantage of all it has to offer. The vendor raised the question of how can vendors increase the learning curve so teachers learn faster but are not overwhelmed in the process?

Several vendors discussed the timing of training as a challenge. Timing is a challenge because many districts provide professional development in the summer but by the time the course starts in September teachers have forgotten much of the critical information. Also offering a one-time professional development event does not facilitate lasting learning. Many districts also make a top-down decision for a particular technology program and send their

teachers to training with little or no background about the technology or how the district intends to make the technology useful to improving student outcomes. Without teacher buy-in, professional development is often useless. In addition, many districts do not have funding or resources to offer job-embedded ongoing support that could mitigate the loss of learning through poor timing.

One vendor discussed that many teachers must create curriculum as well as teach the lessons in an online environment that is often unfamiliar to them as new online teachers. Another chimed in with that most districts do not offer any transitional support to teachers as they move from a traditional setting to online environments. Both agreed that having teacher support was critical and could be improved if teachers were able to negotiate and direct their own professional development to keep their learning incremental and their support ongoing. Finally, these vendors discussed the need for teachers to have good examples and mental models of effective online practices that help teachers differentiate to improve student outcomes.

What do institutes of higher education (IHE) need to do differently?

The vendors offered a variety of ideas that they felt IHEs might engage in to address or improve online teacher preparation. They discussed their reliance on IHEs for the initial introductory preparation so teachers understand online instructional strategies and how to be an effective online teacher so that the vendor can build upon that foundation when they teach about particular system features and connect teachers' instructional practices to the system's capabilities. In the IHE's program, vendors thought that including explanations would be useful of why certain online learning models should be adopted and how to differentiate between the models for various contexts.

Finally, vendors discussed including online learning for the teachers in their preparation programs so they experience model practices and practice with it for themselves. One vendor offers Master's level speech language pathology and counseling virtual internships. Another vendor talked about the need for preparation programs to integrate current technology and the latest tools that teachers will find in the online environments. One vendor discussed that teachers need to know what online learners need and experience that for themselves so perhaps the preservice teachers could teach a topic online and receive peer feedback on their performance. The IHE could also set up a massive open online course (MOOC) to administer some of their coursework.

How would "practice teaching" look in the online environment?

As mentioned above, one vendor already offers virtual internships to counselors and service providers, but we wanted to know how this might work for teachers. The vendor that offers virtual schooling discussed that opportunities could be easily available for preservice teachers to observe and student teach in virtual classrooms but that IHEs need to see a growing need for virtual instruction before they might see this option as viable.

Vendors were sensitive to IHEs' reluctance to include online practice as part of their diploma program and offered other ways to document preservice teachers' online experiences. Vendors suggested using micro-credentialing or badges to mark students' levels of competence with online learning strategies. The process would include assessments (real time or video) and feedback for increasing levels of acquired skills that could conclude with a final portfolio performance project. The micro-credentialing or badging should be considered as a continuum of learning about online instruction and competence that the preservice teachers would continue to obtain and update throughout their teaching career.

Implications

Some implications can be drawn from this part of the vendors' forum on the effectiveness of teacher preparation for the online environment. Vendors described the ways in which they take on training responsibilities for their materials and instructional platforms but they seem to have assumed (often incorrectly) that the teachers have a basic understanding of what teaching in an online setting means or requires.

Clearly more emphasis is needed than is currently being done on preparing teachers who already have experience for online environments. In particular a need exists to understand how to prepare teachers with some experience in traditional settings for the data analysis, instructional material development and relational issues that are more prominent in online learning.

A second implication is that preparation to teach online requires that preservice teachers be taught more directly about types of devices and programs that facilitate online instruction, but also, given that they have not practiced relationship building in a brick and mortar setting, there is an even greater need to prepare them develop on online presence as a teacher (Garrison & Cleveland-Innes, 2005).

Based on the discussion, additional topics for consideration include:

1. How are faculties at IHEs best oriented to the landscapes of online instruction and the technologies available?
2. How can vendors and IHEs work together to design effective online teaching practice opportunities?
3. What can IHEs learn from vendor professional development activities that might facilitate or augment their online learning preparation?
4. What role can effective online teachers and administrators play in supporting teachers new to online environments?

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Appendix A
Forum Participants

OSEP AND COLSD FORUM

Vendor Related Practices and Challenges in Online Instruction for Students with Disabilities

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Appendix B
Forum Agenda

**OSEP and COLSD Forum
Vendor Related Practices and Challenges
in Online Instruction for Students with Disabilities**

AUGUST 11TH AND 12TH, 2015

AGENDA

NASDSE Conference Room
225 Reinekers Lane, Suite 420
Alexandria, VA 22314
703-519-3576

Tuesday, August 11th

- | | |
|---------------|--|
| 12:00 - 12:45 | Working Lunch <ul style="list-style-type: none">• Welcome: <i>OSEP staff and Bill East</i>• Participant introductions: <i>a description of your organization; the targeted audience for your products; your role in the organization</i>• Overview: <i>Explanation of how we hope this discussion proceeds</i> |
| 12:45 - 1:45 | Discussion Topic #1: Enrollment, persistence, progress and achievement for students with disabilities |
| 1:45 - 2:00 | Break |
| 2:00 – 2:45 | Discussion Topic #2: Parent preparation and involvement in their child’s online experience |
| 2:45 - 3:30 | Discussion Topic #3: IDEA principles in the online environment (e.g., FAPE, least restrictive environment, due process protections) |
| 3:30 - 4:30 | Discussion Topic #4: Effectiveness of teacher preparation in the blended and online learning environment; and promising (or negative) practices that facilitate (or negate) professional development |
| 4:30 | Wrap-up, suggestions for improving our process and preview for day two. Dinner plans? |

Wednesday, August 12th

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|-------------|--|
| 8:15 - 8:30 | Review: Review of yesterday and today’s preview |
| 8:30 - 9:30 | Discussion Topic #5: Schools and vendors as data collectors and users: Effective and efficient access, sharing, integration, and |

instructional usage of student usage data (e.g., performance scores, dwell time, pages accessed)

- 9:30-10:15 Discussion Topic #6: Addressing privacy concerns; Vendor access and use of school and student information
- 10:15-10:30 Break
- 10:30-11:15 Discussion Topic #7: Integration of universal design for learning (UDL) into courses
- 11:30 – 12:00 Discussion Topic #8: Instructional practices: Integration of optimal evidence-based practices
- 12:00 – 1:00 Working Lunch – Discussion Topic #9: Availability of students’ strategy instruction in online environments (e.g., selection, monitoring, prompts for strategy use that support student learning as in reading comprehension or memory strategies)
- 1:00 - 1:45 Discussion Topic #10: Supervision for online learning in general education and in particular for supervision in special education
- 1:45 – 2:00 Wrap up: Our next steps with this information: draft a summary; share the summary with you for accuracy and completeness; draft a report on each topic and share with you for edits regarding accuracy and completeness; and complete revisions and disseminate to you and interested parties.
Your closing comments
Reimbursement issues and our closing comments
Thank you and safe travels