

Instructional Practices: Integration of Optimal Evidence-based Practices

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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, a Vice President (VP) of Innovation and a 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. As of the 2015-2016 school year, Connections Education supports full time virtual 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 focuses on fully online schools that 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 around its collection of over 360,000 professionally-evaluated, standards-aligned digital learning resources. Knovation's solutions 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 scientific-based 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.

[Instructional Practices: Integration of Optimal Evidence-based Practices](#)

This eighth vendor forum topic summarizes vendors' perceptions around any evidence-based instructional practices for online environments and how they integrate these practices into their products and services. Integration of specific instructional practices can make a

difference on students with disabilities' learning and achievement (Swanson, 1999; Swanson & Sachse-Lee, 2000), in particular for cognitive and learning strategies instruction. However, the Center has found online educators cite two barriers to integrating promising practices: (1) challenges building and maintaining relationships with brick-and-mortar schools when necessary, and (2) getting and keeping parents involved to appropriately coach their child in online learning (Rice & Carter, 2015; Rice & Carter, in press).

The Center learned from the State Special Education Directors' forum (Franklin, Burdette, East & Mellard, 2015) that directors felt educators cannot assume evidence-based practices are as effective in online settings as in traditional classrooms in which they were developed and validated. The directors also noted that often lesson delivery may be less effective, because online instructors do not create the lessons they teach. The online instructors rely on the curriculum or the curricular activity that another instructor developed. The participants also thought that existing research is insufficient to identify any virtual instructional practices as automatically "evidence-based" even if the evidence may be substantial when the practice is implemented in the face-to-face classroom setting. Their concern is because they believe that implementation can change from a traditional classroom setting to the online setting.

In another forum (Franklin, East & Mellard, 2015), the Center learned from six superintendents of online schools that they are finding some student success in integrating particular instructional practices. Some participants discussed allowing students to choose how to access content and using formative student data to inform IEPs and tailor instruction. Online teachers also take it upon themselves to incorporate new tools and techniques they view as promising. However, overall impressions from Center research are that responsibility to integrate evidence-based instructional practices in the online environment is difficult for educators to conceptualize and enact (Basham et al., 2015).

How important is this topic to your organization?

Every vendor agreed that identifying and integrating evidence-based instructional practices was an important topic. Regardless if the vendor is offering online school settings or LMS platforms or specialized software, each vendor thought that knowing about effective online instructional practices and considering them during the design phase was necessary to create products and services that support students' learning, achievement, and responding.

What is working well for your organization on this topic?

Several vendors stated that they work closely with school district staffs around data-use and provide trainings to make sure they know how to implement the courses properly. The general tone of the conversation was that having strong relationships with practitioners was very important to their development and evaluation activities. Those vendors providing instructors and courses were comfortable with their knowledge base on what makes instruction effective and they have included feedback loops to parents and students so the vendor can learn how to improve products or services.

Another vendor talked about using regular field-based interactions with online teachers, looking at specific instances of student use and outcomes to determine what is and isn't working well to inform their product development. This vendor raised a point that might be of interest to such persons as curriculum directors, researchers, and school administrators about how educators trust what other educators are using and doing and not necessarily look at formal research reports. Educators seem less interested in "gold standard" evidence and more interested in their colleagues' impressions and practice so they can implement similar programs in the hopes of achieving similar results. Another vendor discussed the importance of having close relationships with schools in order to be responsive to their classroom needs, especially during the transition time of traditional classrooms to blended environments.

In addition to the practitioners' comments, the vendors indicated that they read "learning science" studies and work to integrate those findings into their curricular designs and instructional practices (e.g., set goals, get feedback, and allow for student practice). One vendor is piloting a redesign of their algebra I course, and as part of that redesign, incorporating "best practices." This vendor will collect data on student use and outcomes to learn how to best help students achieve and perform and revise their course.

What are the top challenges you face?

A challenge came up from one vendor who provides a LMS platform. The challenge they experience is to discern when an instructor's concern is personal instead of a research-based concern and then determine their level of response. Another vendor noted that more research is needed around best practices in blended or fully online learning and that, while they try to stay ahead of the information, the scarcity of strong research creates a significant challenge. As an example, vendors continually ask themselves if and when online instructors should lecture, arrange small or large groups, and/or use one-one tutoring to support student learning.

One vendor discussed the notion of a "flipped" classroom, whereby students engage with content on their own and then are coached by the instructor when they come across material that is difficult for them. In this scenario, students move at their own pace to get to "mastery" instead of fulfilling a certain number of "seat hours." This type of learning requires new technology to make it possible for all students to engage more independently in their own learning, but is challenging for vendors to gather data on this approach to determine the most effective new tools and approaches.

Finally, a challenge repeated in other forums is that vendors need a way to seamlessly integrate their data with other data platforms so they can share learning with each other. This type of relationship that shares student data responsibly will benefit both organizations and help the industry learn about what works well for students in online settings.

What is your sense of the value of "porting" evidence-based practices from classroom to online settings?

Most vendors discussed this question in terms of building and maintaining relationships with instructors, researchers, and school and district leaders. Vendors work closely with their partners to gather evidence-based practices that are working (and those practices that are not) and the conditions in which they are working. Vendors listen to instructors about what instructional features they want and then look for research to support the request or conduct research themselves to determine if the feature is effective.

One vendor talked about the potential danger in assuming that if a practice works in a traditional classroom the same practice will work online. The concern is that this kind of thinking can mask the power of online learning since the online environment offers unique features for personalizing the learners' instructional experiences. The online school vendor described the experience with adapting instruction to meet accelerated students learning needs. The vendor worked with a well-developed and widely implemented curriculum used in brick-and-mortar settings for high achieving students. The goal was to adapt their curriculum for fully online settings. The instructors received training and had the opportunity to offer feedback as the features were being added to their online curriculum.

A vendor that provides a LMS platform talked about how teachers often teach from habit and not necessarily using evidence-based practices. In traditional classrooms, teachers direct the curriculum, but online settings offer more opportunities for students to be self-directed with the teacher's role changed to facilitating, monitoring, and coaching. Therefore, the vendor is cautious about assuming that evidence-based practices transfer seamlessly to the online setting.

Vendors also discussed the importance for the software and curriculum design engineers to be part of the conversation with schools and districts. Once the engineers learn about what features are helpful, they can work alongside the production team to create or retro-fit materials or approaches. Vendors can help guide district curriculum teams, who often do not have the technical background necessary to provide a variety of learning paths to meet the needs of diverse learners.

How is implementation fidelity assessed?

The vendors offering LMS platforms do not have a way to determine if their products are being implemented as they intended. They can track usage data but nothing that offers more fine-grained information within their products. Online courses or schools, however, do have a different experience. They have more information based on student outcomes, students' time and frequency of engagement with the interventions, and in some cases how students use the feature.

Implications

Implications can be drawn from the vendors' forum on integrating evidence-based practices in online settings. A strong need exists for more research about what constitutes an

evidence-based practice in online settings because too many unknowns remain about whether a traditional practice automatically works in online environments. The online environment offers students a different way to learn, one that can be more self-directed, that therefore offers teachers a different way to teach. Supporting vendors, educators, and researchers close collaboration is important to monitoring possible practices as they are applied in various online settings. Vendors are accustomed to offering user feedback loops, continuing this industry practice is an important activity to gather practitioner input regarding the online learning environment.

Based on the discussion, additional consideration is recommended for topics including:

1. What instructional practices are supporting learning for students with disabilities?
2. In what way do students with disabilities interact with the materials, pathways, and online environment that best support learning and demonstration of their knowledge, skills and abilities?
3. What data are most useful to guiding curricular revisions and determining pathways that promote self-reliance and self-determination?
4. What teacher training is best to improve teachers' understanding and application of the power of online learning opportunities?

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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