

FINISHED FILE

IEL  
IMPROVING STUDENT OUTCOMES IN POSTSECONDARY EDUCATION THROUGH  
UNIVERSAL DESIGN FOR LEARNING  
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>> ERIC CLINE: Hello, everyone, and welcome to today's webinar. My name is Eric Cline with the Institute for Educational Leadership and the National Collaborative. I am going to provide you a brief overview of what you are looking at here on our webinar platform just to give you an orientation.

In the top left corner you will see a files window which has the PowerPoint for today's presentation in it. You can click that document and download it for use now or later.

Before that, you will see the Q&A window. You may type specific questions, either related to the content we will pass on to the presenters, or if it's a technical question, we will also be able to field that. I can answer questions both to you as an individual, or if a question might seem helpful to everyone, I can answer it for the whole group.

Below that window, you see a little Chat window. People may chat with each other or may chat with us as host. If you have a question, it's best to put it in the Q&A window, but we will also try and monitor the Chat window to keep up on anything important that we want to bring up.

To your right you will see the PowerPoint window, which right now is covered with two polls. We are going to be pulling

those polls down. Those polls just give us a better sense of who is on the call and how can we best target the content.

Then importantly, right below the PowerPoint and the polls, you will see the caption pod, and that is where we are live captioning this PowerPoint. If you have any questions, again, pop them into the Q&A spot, and I am going to pass this on to Mindy. Go ahead.

>> MINDY LARSON: Thanks, Eric.

Welcome, everybody. I am Mindy Larson. I work at the Institute for Educational Leadership. We are a national nonprofit that equips leaders to work together across boundaries to build effective systems that prepare children and youth for postsecondary education, careers, and citizenship. And IEL houses the National Collaborative on Workforce and Disability for Youth, which is a National Technical Assistance Center that's funded by the U.S. Department of Labor's Office of Disability Employment Policy.

Since 2001, we have been providing technical assistance and creating resources that are aimed at assisting state and local workforce development systems to better serve all youth, including youth with disabilities and other disconnected youth.

Recently we've begun to focus on assisting postsecondary education institutions with building their capacity and strengthening their practices to increase student retention and success. This includes highlighting strategies to better support students with disabilities in postsecondary education, given that they are a growing segment of the student population in higher education.

So today's webinar is a part of a series of webinars targeted to postsecondary institutions.

We are happy to be focusing on Universal Design for Learning with today's webinar, which will provide both an orientation to Universal Design for Learning as well as an explanation of some of the ways to improve and optimize teaching and learning for all students based on scientific insights on how humans learn.

We are happy to have presenter Sam Johnston from CAST with us today to present on Universal Design for Learning, and we'll have a few opportunities to get your input on this topic throughout the webinar, so I just want to encourage everyone to jump in whenever we turn it over to questions and comments from all of you, but for now I just want to welcome Sam and give her a chance to kick us off.

>> SAM CATHERINE JOHNSTON: Great. Thanks very much, Mindy, and I am very happy to be here with you all, for most of you this afternoon, for some of you maybe late morning, but thank you for giving us some time today to talk with us about

Universal Design for Learning in the postsecondary context, and we at CAST have been working in that area for a number of years, and most currently are working with TAACCCT grant program, and I will talk about that later today.

Please feel free to put some questions, and Mindy will monitor that. Also, we will have some opportunities as we go along to ask some polling questions and have you hear from one another a little bit, which is always very important.

So thanks for taking some time today, and here we go.

So CAST and Universal Design for Learning. So CAST is actually not very big. We are a little under 50 people, an education research and development nonprofit located in Boston, Massachusetts. What we do is basically leverage science and technology, so the learning sciences, sort of the research that exists into how human beings learn. And emerging technologies, particularly educational technologies. And we create products, we promote practices, and we inform policies to expand learning opportunities for all learners. And Universal Design for Learning is really a framework born out of that marriage between the learning sciences and technology, and it aims to improve and optimize teaching and learning for all people based on these insights into how human beings learn.

And there's sort of two core premises. The first is really that we sort of look at students in the margins from the outset because what they show us is that innovations that are essential for them, for students who really typically are not thought of when we just design for sort of an average mythical student, are those students that actually show us, well, the system is actually a little bit broken, it's not working that well, and they are the ones who really need it to change. So they end up being the lead on innovations that often then become mainstream innovations. So if you think about something that we all use that we have here today, closed captioning, for some individuals, that's an essential feature of learning environments. For other people, it's very beneficial even when it's not essential.

So as we move more into learning on our small handheld digital devices, you can imagine being on the bus and you are trying to sort of follow along with a TED Talk, and there it is, have you the capacity to follow along with captions. You don't have to use the audio output to follow along. So that's sort of a -- you know, an example of something that's essential for some but beneficial for many. And as we move further and further along to designing learning environments that include technology and include a broader population of students, we really continue to sort of look at those students in the margins as being sort of the future of where we innovate. So this is why we sort of

find IEL's work so exciting and the work so many of you are doing so exciting is because you are really -- you know, you've got your hands deep in the work of innovation and sort of trying to address the challenges of creating good learning environments for all students.

And the other sort of core idea behind Universal Design for Learning is that disabilities really are always about the interaction between individual and the environment. So we don't look at disabilities to sort of fix, and all about the individual and their characteristics. We look at those at about a mismatch, very often between the design environment and the individuals' strengths and weaknesses in that design environment. So we try to reduce or lower barriers by designing for a wider range of learners from the very outset. And that's the premise behind UDL.

And I know that at this particular webinar, lots of you are going to be at different levels, but my hope is you will be able to pull different things from the presentation as we go. Even if you are sort of familiar with the framework, you may not be as familiar with some of the initiatives that are going on where people are looking at the relationship between UDL and postsecondary outcomes. So hopefully you will all get something, and if not, you will at least be able to talk with one another in the Chat and make some connections.

So what are we sort of trying to cover today? We are trying to look for a fit, casting UDL in this access and retention problem in postsecondary. Then thinking about UDL as a research-based framework for addressing learner variability and creating equitable environments that not only students can access, but they can make progress through and complete degrees, credentials, courses of study so that they can get into the workforce and move on to do whatever exciting things they want to do. And then looking at sort of some strategies around implementation of UDL in curricula and policies and practices, and drawing a little bit from a resource that we've built with generous funding from the Gates Foundation and in conjunction with a lot of input from TAACCCT grantees from community technical college grantees, as well as four-year university partners about what would be needed to help translate UDL into a postsecondary setting.

So we are going to look at some of that a little bit, and I hope for those of you who don't know that resource, this will be a nice way to sort of get familiar with it and then use that resource as needed.

So we are going to just start with a polling question a little bit here. How familiar are you with UDL? And I will let Eric put that up, and we will give people a few minutes to

answer.

And the options are not at all familiar, a little familiar, moderately familiar, very familiar.

So it looks like most of you are sort of in the middle here, where most people are sort of hovering between a little familiar and moderately familiar. There's a handful of people that are very familiar, so hopefully you'll think about yourselves here a little bit as teachers of others, and also very welcome to give me feedback on anything in terms of, hey, I don't think the concept is well represented in this way or would be better represented in that way or, you know, I want to borrow some of these slides or whatever. So if you are in a position where you are really familiar with it and some of this information is not new, please think about how you might use it in your own delivery of UDL trainings or whatever to people and how you might kind of serve as a teacher for others.

So we've got 7 people that are not at all familiar, 15 that are a little familiar, 16 that are a little familiar, 21 that are moderately familiar, and 7 that are very familiar.

So I am going to move on here. That's great that we have that spread.

So when we really think about UDL in postsecondary and a lot of our work in higher ed and partners that are at higher education institutions, increasingly we have been trying to look at this issue of, well, why have UDL in higher ed? Why not have something else? Why does this actually matter? And the reality is it's actually 20, 30 years ago when CAST got started, they were trying to address a problem in K-12 that actually is a problem that's showing up quite similarly in postsecondary. And what they were trying to do is address this challenge of systems that the environments were really not designed for all learners. So CAST founders started out as really clinicians, and they would create these elaborate plans to give students -- for example, a student who was in a power wheelchair and had very limited physical mobility -- access to schooling. And what they found is, well, the schooling environment is really so inflexible that these plans are not quite as effective. And I think in higher ed, what we see and what we are looking at at this slide is in certain institutions that are already screening out the vast majority of applicants, so what we see is that in four-year institutions in the slide that accept less than 25% of the students that apply, 95% to 96% of those students are retained from one year to the next.

When we move into four-year institutions that are open admission, that actually drops to 61% for public institutions, 63% for private nonprofit, and 52% for private nonprofit institutions. So they are at the low end only retaining about

half of the students that are in there in this open-admission four-year institution setting.

When we look to two-year institutions, all acceptance rates, most two-year institutions have open admission. We've got between 58% and 66% that are kind of year-to-year retention rates. So that sort of indicates to us, at least, that, well, those students that have done okay in this sort of system that's designed for sort of a typical mythical average student in K-12 gets screened into these four-year institutions with very high retention rates. So those students that do fine when we just design one way do fine in postsecondary. But when we actually broaden out the population of students that we are including in postsecondary, which is key to sort of sustaining a competitive workforce, to ensuring our workforces represent our population, we find that our capacity to retain students actually drops pretty significantly.

So there's really a need to bring strategies like Universal Design for Learning more deeply into the postsecondary context so that we can actually start to tackle this mismatch between admission and retention for all students as opposed to just sort of say, well, you know, a certain percentage does fine the way we design it. Let's just charge ahead with that. We're really not doing well enough, given the fact that we've sort of accepted a broader range of students, we are not doing well enough yet in retaining those students from year to year.

So you know, we know some things over, really, 30-some-odd years of research about what it takes for institutions to retain students, what it takes for student success and student persistence. And interestingly, these things aren't just about, you know, can they perform academically on this particular task when they give it to them in this particular way. There's a lot of things that contribute to students persisting through to degree completion.

And Tinto's research, he has done sort of 30 years of research into student persistence and retention across a wide, wide range of institutions, and he has really found that there are sort of four things that institutions need to pay attention to to ensure that a broader range of students can succeed. And these are high expectations and self-expectations. So students that -- students' expectations for themselves, that they can succeed in postsecondary. And those are reinforced by expectations of faculty, administrators, fellow students, parents, others that also reinforce those self-expectations that students have to succeed.

Academic and social support, both inside and outside the classroom. So you can think of things like academic support, you know, scaffolding and support for learning tasks.

Opportunities to have formal assessment before you have a high-stakes assessment. But social support in the classroom is just as important as outside. What are the relationships, the learning relationships, like amongst classmates? How well are we doing to provide environments where everyone can demonstrate that they understand things and then they serve as good learning partners for others because it's clearer to others what people know?

This issue of assessment and feedback is really critical, so you know, giving high-quality formative assessment of students' progress that not only informs the student of how they are doing, but informs instruction and the kinds of support we provide. So really designing a dynamic system where we are taking the students' learning and using that to optimize the learning environment for all learners.

And then kind of the flip side of academic and social support, if that's well done, then we have interaction/engagement in social and academic processes. So those are sort of four factors that are really key.

And our thoughts about how these tie to UDL's role in student persistence -- and I don't know why this -- for me, at least, this graphic is not showing up, but I can just sort of talk through it.

So what we have when we think about that is sort of when you have these optimized -- I am just going to go back to this slide because the graphic on the next is not showing up. But when you imagine having environments that are better designed for all learners, so where everybody's sort of learning needs have been thought about, it's much easier for individual students to meet their own self-expectations, and it's certainly much easier for faculty to have high expectations of students that impact students' own expectations of themselves. People are set up for success, wow, they actually succeed. And then in those types of UDL environments, there is academic and social support for all students, not only because you have the right sort of academic supports, scaffolds and supports, but you actually create a context where, because a broader range of students are well supported, they start to look like and become good learning partners for other students, and there's much more peer-to-peer support that happens.

Then -- and this is so important, and we, really, at CAST, are so interested in this issue of assessment and feedback. Assessment, formative assessments and the feedback you give in well-designed environments looks radically different than formative assessments and feedback you can give in environments that are really only designed for a subset of the students you teach. It's Perfectly fine to say to students, you know, you

didn't pass this multiple-choice test. But beyond that, it's about the fact that what we are really measuring is how good they are at recall, how good they are at multiple-choice tests, as opposed to saying we had this concept in the class and I give you these two or three ways to demonstrate that you understood the concept. You didn't choose the multiple-choice way, but you were able to demonstrate it in this way.

So let me give you feedback on what you did and didn't understand when I actually created some objections and some, you know, different ways to actually draw out what you know. So feedback in richly designed environments can be fruitful for not only students understanding how well they are doing, but for instruction and understanding what students really need in terms of support. And what supports they are using when you make them available. And all that leads to sort of interaction and engagement and social academic processes. And that translates into the issues, those hard numbers like course add/drops and course completion and GPA and degree completion. But looking at these sort of intermediate variables, these levers for student success and persistence, is really, really important when you think about a UDL initiative and how you sort of measure impact and outcomes.

It's not just measuring course grades or GPA. It's looking at these things that we know are important and positive variables for helping students succeed and persist.

So some examples we'll sort of talk about a little bit later today, but people are starting to look at these things and measure the relationship between UDL and retention, which we're really excited about, and I'd say to all of you that we are always looking for partners to look at those things with us. So if that's something that's of interest and you want to reach out, please do. Or if you know of something where people are doing some of this work, please reach out because we have a vested interest in building the body of evidence around UDL's efficacy in postsecondary, and we definitely can't do that alone.

So the North Carolina University system has been seeing higher pass rates for STEM and gateway courses, these courses that are sort of high enrollment and typically low pass rates -- you think of your Chem 101 or your Physics 101. When they are training tutors in Universal Design for Learning -- and I'll talk a little bit more about that model -- but they are seeing that when people who are part of the teaching process are trained in UDL, students in these gateway STEM courses on average succeed more than when not training -- that UDL training of tutors does not happen.

You know, what we know from the retention work is that



academic and social support outside the classroom is as important as within, and so other work is -- we've seen audits of UDL, UDL audits of disability services, for example, great work's been done at McGill, and what they saw is more utilization and improved efficiencies in the delivery of disability services, which is so important when we know students don't always disclose. Students who really need services don't always disclose to their disability services office. So McGill, several other institutions have thought of how do we make those services more -- better designed for a wider range of students so that take-up is higher, more people are using services, and they are getting the right kind of services?

Some of our own work, we saw very wide adoption of community college open education resources that were designed using UDL. After a year, these open education resource modules were released, they had been used almost 6,000 times and across multiple settings, including industry, postsecondary, non-credit-bearing courses, credit-bearing courses, and then in GED programs. So when you design for UDL and you design with UDL, the versatility and the usability of resources actually broadens out quite a lot, which is sort of a nice side benefit, but it's really important.

And then some work that's happening now, looking at research into differences in retention when students that have -- that have -- you know, legally are able to receive accessible educational materials, the students have a diagnosed print disability receive those. Georgia Tech right now is doing some work to look at what are differences in retention when students have the accessible materials they need versus when they don't.

So he's are really exciting. They are all sort of different strategies to look at UDL and retention. But I would urge you, if you are sort of moving ahead with the UDL initiative or you are thinking about doing some of the work to make this happen in your setting, think from the very outset about what your plan is to look at the relationship between that and outcomes for the learners that you serve. And there are some good models out there and some things you can buy, beg, you know, or steal that already exist, so you don't have to reinvent the wheel.

So we are going to be looking today as we go along a little bit at UDL On Campus, which is our sort of first pass at CAST at trying to develop and translate UDL into the postsecondary context. We thought this was really, really important work because K-12 and postsecondary are really very different. The way students navigate the system are very different. The opportunities they have are very different in the system. And the way disabilities are addressed in the system is very

different. All that on one end, and then on the other end, the stakeholders are different. Faculty in higher education institutions operate very differently than do teachers in K-12 settings that are often sort of given a set curriculum and given set training that, you know, everybody has to take in a certain way. Higher ed is very different.

So in our design of UDL on Campus, we really tried to take a systems-wide approach. So there are resources that are focused on course design that are going to be very relevant to instructional designers or faculty members, as well as others that are thinking about design of any kinds of materials. There's stuff on media and materials that are really there for anybody from people who are doing tech procurement to doing sort of quality control, ensuring that when people are putting content in, they are doing it in ways that are -- that follow best practices around UDL and accessibility. And there's stuff in there for those people that are in roles where they are thinking about what's our policies, what are our practices too? What do we need to know to make sure we are meeting our legal obligations around accessibility and policy?

And then there is a whole section with examples and some nice videos around UDL and higher ed, how to get started, et cetera, et cetera. So if you have looked at that, if you have looked at that site before, say a year or so ago -- I know I did a similar webinar last April -- look again. We revamped the site completely in October, so it's a completely different site now, and would love feedback on it. We are always trying to sort of improve it and add in some additional resources and supports.

So for those of you that are really familiar with UDL, this is going to be old news, but we started at the beginning saying our focus is really around the learning sciences. And it really comes from looking at three broad learning networks. The brain is, of course, much more intricate than this, but very broadly, we have sort of three main networks, and the first is sort of at the back of our brain, the recognition network. That's where we perceive information that's coming in, sensory information that's coming in from the environment. That's really the what of learning. What am I looking at? And to have resourceful, knowledgeable learners, you need to really be thinking about presenting information and content in different ways to count for the fact that people recognize information in different ways.

We are not all the same. So captioning, for example, I talked about earlier, for some people, when they are looking at a video resource, if they are hearing impaired, they are not going to understand that video resource unless there's captions in the

transcript. They perceive that information differently than someone for whom auditory processing raises no barriers.

Then there's this sort of our executive functioning, our kind of frontal lobe, front part of our brain, strategic networks, the how of learning, how we go about going from looking at information to putting a plan into action to saying, you know, here are the steps I need to take to turn this from just what to how; how am I going to accomplish something? So to have strategic goal-directed learners, we really need to differentiate the ways that students can express what they know, that they can express understanding.

And then so critical and what much of our work here is focused on is this issue of affective network. It's our limbic brain, our old brain it gets called. That's really the why of learning. Why would I pay attention in the first place to this information you are putting in front of me, to then taking action to turn that into learning. And for purposes of motivated learners, you really need to stimulate interest and motivation of learning in different ways. You can't think about everybody is going to be motivated in the exact same way.

So the UDL Guidelines -- and these are just from the National Center on UDL. You have these available, you have the examples, you have the research behind them. So don't feel like you need to digest these right here right now. There are tons of support resources on these, on the National Center on UDL, which CAST runs. But this is basically based on what most of our research is focused on, and it's based on originally 800 peer-reviewed articles that say in these areas of providing multiple means of representation, the first principle that count for differences in the recognition network, you need to be able to provide options for perception. You need to be able to provide options for language, mathematical expression and symbols. And you need to be able to provide options for comprehension in order to have resourceful, knowledgeable learners.

And there are nine Guidelines, and then there are checkpoints within those that are ways of sort of applying this very directly, so this idea of providing options for perception, offering alternatives for auditory information is a concrete strategy you can use in the classroom to provide an option for perception.

In this area, the second principle of providing multiple means of action and expression to account for differences in how we learn, there's a need to really provide options for physical action. So if you think just in accessibility issues, you wouldn't want to have someone just navigating by using a mouse because if they had limited mobility or had even, you know, a

stress fracture or something, sometimes temporary things, if they have to navigate and use a drag-and-drop if they are completing an assessment, they are not going to be able to show what they know. You are actually measuring their capacity to manipulate a mouse. Whereas if you have a keyboarding alternative and they can use a device to access that keyboard, you are not testing their motor skills; you are testing their capacity to understand the content that you are trying to teach them. So you want to provide options for physical action, understanding that people vary in how they act physically in learning environments.

Providing options for expression and communication, understanding that those things are also very different, how we express ourselves, how we communicate is very different across learners. And options for executive functions. So options in how much support students need to be goal directed or to monitor time or to sort of manage the learning resources that they use in the postsecondary setting to accomplish things. That's also widely -- there's wide difference there is, not only from one person to the next, but based on their familiarity with things. I have taken four online courses, I am pretty familiar with how to get around. But if it's my first online course, I might need some more supports.

And then in this area, this third principle of providing multiple means of engagement to account for the fact that we are motivated differently. You want to provide options for recruiting interests, not assume everybody is interested in the same exact way. Provide options for, then, sustaining interests. And provide options for self-regulation. Providing options for different ways in which students can regulate their emotions and learning, self-regulate.

That's sort of the overall strategy with the Guidelines, and again, the checkpoints underneath kind of give you specific things you can do in the classroom to make UDL happen.

We never expect people to go about doing all these things and all at once. The goal is to try some stuff out, and you know, take a few things on, and then see how that's helpful and then keep going from there.

But you can see with the Guidelines, there's often this way of thinking sort of vertically about Principle I, Multiple Means of Representation. II, Action and Expression. III, Engagement. But actually, if you look at them horizontally, the first ones are really aligned with best practices around accessibility and, in particular, Web accessibility. The second row is really focused on how we make information meaningful. So you give people access to the information. How do we then help them persist and do the things they need to make that information

meaningful, to make it really something that they are using in a learning environment?

And that third level is really -- that third row is where we really want to get and how we want to support students so that they are independent and self-directed regardless of context or regardless of the course of study, they are able to persist, they are able to sort of self-regulate, they are able to pull in the strategies they need for executive functioning so that they are really sort of lifelong learners.

So UDL in federal policy. This is, for some of new a policy role, is important for you to know. Because the Higher Education Opportunity Act of 2008 has a lot of information about accessibility and accessibility is the law, so you know, institutions of higher ed have to make sure that they are following guidelines around accessibility to ensure they are not violating people's Americans with Disabilities Act right for students with disabilities. But because Universal Design for Learning is not just about access to information, it's about access to learning, the Higher Education Opportunity Act also put in language around UDL. And they say the term "universal design for learning" means a scientifically valid framework for guiding educational practice that provides flexibility and reduces barriers and instruction and, at the same time, maintains high achievement expectations for all students. So it's really important to know it's not about dulling down curriculum; it's about ensuring that everybody has the right kinds of support so that they can achieve and meet high expectations.

The brand-new Every Student Succeeds Act -- this is going to affect more of you who are in K-12, but keep in mind if students have expectations for the types of technologies and types of environments in K-12, those expectations are not going to disappear just because they get to higher education. So as ESSA gets more focused and there's really -- in the ESSA, new language around UDL, that's going to also be part of students -- students are going to start to expect learning environments that use UDL. And that when they get to higher ed, we want to be ready for giving them those environments that they need to be successful.

So ESSA for the first time funds by formula. Districts can get sort of formula funding to use technology to increase access to personalized rigorous learning experiences supported by technology. So to purchase things that allow for personalized learning technologies. And there's several components, but one of these is that they need to be using technology consistent with the principles of Universal Design for Learning to support the learning needs of all students, including children with

disabilities and English language learners.

So there's a growing call for technologies that are actually from the outset designed not only to be accessible, but to include the principles and the Guidelines of Universal Design for Learning, which we think is really awesome, and we hope you do too.

The Employment and Training Administration at the Department of Labor provided \$100 million in grant funds just recently for the American Apprenticeship Initiative with a focus on opportunities for underrepresented populations. There's no specific UDL language in there, but when we are dealing with underrepresented populations, we really do almost always try to think about UDL as a good way of ensuring that their approaches to learning are thought about from the outset rather than an afterthought.

WIOA doesn't have specific UDL language, but it utilizes UDL's concepts throughout to describe target employment and training programs, and UDL will be very important, given the emphasis on serving both out-of-school, disconnected youth and individuals with disabilities. WIOA also improves services to individuals with disabilities and calls for all American Job Centers to provide both physical and programmatic accessibility to employment and training services for individuals with disabilities. So remember that first layer of the UDL Guidelines that's focused on accessibility? That's a great first step, and that's now a requirement in the American Job Centers that programmatic accessibility, ensuring, for example, like we see today, captions available if you are going to provide training via webinar; that your technologies work for all people and don't have -- don't impose limitations that don't allow people to learn and engage with employment and training services.

So all these things are really positive for the growth of and the potential of UDL to really have a strong role in postsecondary and in workforce preparation as well.

We have worked closely -- and I have led this work here at CAST -- with the Trade Adjustment Assistance Community College and Career Training Grant Program, so the Department of Labor's \$2-billion investment in community and technical colleges to help them build new programs in areas where there's a real labor shortage, so there's a real demand for workers, and there's the opportunity to have sort of high salaries. And this has impacted over 800 community and technical colleges across the country. And all of these community and technical colleges are required to use Universal Design for Learning and to meet Web Content Accessibility Guidelines at Level AA in their programming. So actually, the Gates Foundation funded us to

work with TAACCCT grantees to try to help them meet these requirements, and UDL on Campus is one of our sort of strategies to help TAACCCT grantees to meet this requirement. But good to know about UDL, it's starting to show up increasingly in very large grant announcements, and so really good thing to know about so that you are able to sort of respond appropriately and have a plan for building it into your programming, just the way TAACCCT grantees have had to.

Okay. So polling question. A little break here, which is good. And this is open ended. Where else have you encountered UDL?

>> MINDY LARSON: Yes, so this is Mindy again. I just wanted to jump in and encourage folks to both answer this question so that we can hear from you about where are you seeing it in your work? Where are you hearing about UDL? Is it in connection to any of the policies that Sam just talked about, WIOA or ESSA or the Higher Ed Act? Are there others signs and place where is you are starting to hear about, learn about, or use UDL? We would like to get a sense of your context.

Then at the same time, feel free to add any questions to the Chat box or using the Q&A pod is always helpful so that we can find out more about what you would like to know, and we can start responding to some of those questions.

Sam, there was one question so far. I see you just wrote in a response to Jenny. Do you want to go ahead and talk about that?

>> SAM CATHERINE JOHNSTON: Yeah, I don't know of a clearinghouse to support executive functioning skills. It's still a very underdeveloped area.

I would say a couple things. One, we have a resource on executive functions on UDL On Campus, talking about how you can pull some features from learning management systems, use some of the features that are available in learning management systems to support executive functioning. So I would look at those, including things like you can have sort of -- you can program alerts that sort of, for students who are maybe struggling or haven't gotten in, some alerts to say hey, it's time to get in and things like that.

So I would look, A, at what's available. Talk with your EdTech office, your Instructional Design office, about what's available, features are available in the learning management system to support executive functioning.

And then the other thing I would say is there are a number of people that have done some good work on executive functioning support for postsecondary students. Karen Boutelle at Landmark College has done some good work there, and those are sort of just a couple options I think in our Executive Functioning

resource on UDL On Campus, there's probably links to a few more resources.

>> MINDY LARSON: Okay. We had a response from Tabitha that saying she is only hearing about UDL at conferences and those in The disability services field. We also had someone who responded and said she is encountering it in day camp activities for adults with disabilities as well as preschool and elementary classrooms. Then we had two folks who mentioned that they do universal design but not learning.

>> SAM CATHERINE JOHNSTON: So that's interesting. So some folks are seeing it in the physical design environment, but not necessarily extending to learning. So I will talk about that a little bit more, some of the things coming up that may push it a little bit more into learning in your work. I would also say, you know, increasingly we need to think about our online environments as part of our physical environments because they are very much where learning happens. They are also where we do things like all our banking. So -- and a lot of the settlements that have happened with the Department of Justice have started to actually include these as part of it, so they've extended the idea of physical access to the online learning, and most good technology providers should be following high standards of accessibility in order to be capable of actually selling in higher education.

So I will talk about that a little bit more as well.

But I think that's a nice sort of bridge of thinking about, well, access to the physical environment also now increasingly includes access to those tools that we use to access our environment. So you know, the Web, you know, hardware, software, those things that we are also using that are really an extension of our physical environment and are, you know -- need to be thought through in the same way.

>> MINDY LARSON: All right. Here's a couple more responses. So Sherry says we use UDL during our summer youth work experience and the pretraining that we provide to students with disabilities. That's wonderful to hear. So there's a youth workforce development context.

And then Victoria said that she's on the State Council for DOR, which I am assuming Department of Rehabilitation, and the new combined state plan is included.

>> SAM CATHERINE JOHNSTON: Great.

>> MINDY LARSON: Then she also has a daughter that attended a charter school in California that adopted the concept of universal design to all academic areas.

>> SAM CATHERINE JOHNSTON: Great. Yeah, and we definitely, you know, seeing it show up in the TAACCCT grants has been huge in terms of community and technical colleges using it. We have



seen a lot of higher educational partners using it, EDUCAUSE, ELI. I will have a resource available here, but Universal Design for Learning is one of the components in their seven standards for next-generation learning environments, learning courseware, what that should look like. So it is showing up, actually, in a lot of different areas, both in sort of technology-enhanced learning environments, but also in curriculum standards and other places as well.

>> MINDY LARSON: And I just wanted to add to Tabitha's second comment. She knows about UDL heavily in the context to design lessons, but in higher ed, UDL is completely unknown, and faculty are resistant to it because it requires more work.

>> SAM CATHERINE JOHNSTON: Yeah, that's a very real possibility. I wouldn't say it's unknown. I mean, definitely, we will talk about some initiatives, but there is sort of growing focus on it. And I think people are starting to see that the kind of initial investment ends up leading to sort of downstream benefits of not having to reteach, like being able to retain more students and very understandably, but for the institution's bottom line, being able to have those tuition dollars the next year that they projected they would have that they have when students don't drop out.

So a lot of our focus and our partners' focus on this has been how do we sort of do a better job articulating this to the work around persistence and retention. I encourage you if you are struggling with people to get them to think about moving this ahead, bring those arguments in. Feel free to draw from these slides. Look at some examples that we'll look at who have had really successful UDL initiatives, because in all those instances, people have met with people, you know, who have said oh, I don't want to do the work, or why do this? Or I only have one blind student in my class. Why can't I just -- you know, whatever. So there's -- it's very -- a very real issue, that there is, like anything, going to be -- you know, you are going to need to focus on early adopters. You are going to have to find your champions. You are going to have to tie it to the institution's bottom line, with is retaining students, which is graduation rates, which is, you know, making sure that these things can happen.

So hopefully we'll help a little bit in that regard today, but we can also sort of connect you with some other initiatives to help think through, okay, you know, how do I overcome barrier X or Y.

>> MINDY LARSON: So I think that we covered all the comments and questions so far. I want to encourage folks to continue to talk and share in the Chat box as well as pose additional questions, and I think we can move along, Sam, if you

are ready.

>> SAM CATHERINE JOHNSTON: Great. Yes. So just sort of -- this is a nice sort of example, and I won't spend too long on this because we've talked already a lot about accessibility. But in universal design for learning, and in your thinking for planning for Universal Design for Learning, if you are so inclined, thinking about accessibility as foundational rather than a retrofit is really, really essential. So and most good education technology companies think about accessibility as foundational. They are checking in from the very stage of product concept all the way through to delivery. Have we thought about accessibility at every stage? And so you know, what you have here on the left is from the arts building at the University of Saskatchewan. In the center of the building, in the place where we might often see stairs, instead what you see is a very beautiful ramp. What this means is if I am a student and I happen to use a wheelchair, I don't have to go and do, you know -- I can go with a guest speaker to class and accompany them there. I can leave class and finish a debate that I am having with another student. I don't have to say, oh, okay, well, you know, I've got to go down the hall and find the elevator that's accessible for me, and I'll meet you downstairs in five minutes. And I have an experience that really reminds me that I am separate and that my thoughts and the design have not been central.

What we see on the right -- so you know, that idea on the left is what we want. That's people thinking that accessibility is foundational. They are thinking about maximum users possible when they are designing a way from getting from the first floor to the second floor. They are thinking broadly about their student population.

On the right, you see a situation where individuals in wheelchairs have not been thought of very well. It's a ramp at the side of a building. It's not particularly attractive. It's also where people happen -- there's a can there, which presumably people stick cigarette butts in, so it's where people go out and smoke. So if I am someone in a wheelchair and I don't really want to be encountering smoke every time I enter the building, I don't really have a choice. That's really accessibility as a retrofit, and ultimately, that ends up being extremely costly, and it's not effective. And it also says to your -- to population of your students that they are really an afterthought. So this is just a way of really thinking about and kind of trying to draw your attention to this idea of accessibility as foundational rather than a retrofit, which we really see is so key, and so key if you are moving forward with strategies for your institutions around accessibility and around

UDL.

So we are going to just talk a little bit about this idea of sort of UDL implementation. So looking first at what we do when we think about a UDL in curriculum, we think about four areas. We think about goals, materials, methods, and assessment. So we really see clear goals and the cornerstone of effective curricula. What are you trying to measure? Why are you trying to measure that? Why is that your focus? And it's amazing how often that is not as thought through as it needs to be at the outset.

So when we think about learning goals at CAST, we sort of think about three main things. First, the idea that you would separate the means from the ends wherever possible. What that means is if you are trying to test out a student's understanding of supply chain logistics, so they are taking a course in logistics, and they need to understand what the supply chain looks like, you know, how you get from A to Z, if the only way they can do that is through a drag-and-drop and there's no capacity to do that outside or there's no alternative representations for information presented visually, well, those means are embedded in the end. Some students are not able to show you that they understand supply chain logistics because all they can show you is that they can't do drag-and-drop. So you want to be able to separate the means from the end.

A simpler sort of strategy there, you know, a broader one, is, for example, saying to students, you know, you want them to demonstrate that they have an understanding of a process in a chemistry course, and the only option you give them is to write an essay on it. Now, some students that are great writers but may not understand the process so well, because they are such great writers, look like they understand it better than a student who is maybe not a great writer but could have diagrammed it really brilliantly.

So you want to try to give some options around how students demonstrate what they know. You want to try where you can to separate the means from getting there from the end, from the goal of what they want. That's not always possible. Sometimes the means are embedded in the goal, but sometimes, you know, part of your goal is writing. Well, what we do in those instances is try and provide some scaffolds and support and practice before we sort of high-stakes test something. So you wouldn't just say, you know, write an essay after having no practice in that all year.

And then you really want to kind of address the variability in learning. So you want to make sure that when you are building learning goals, you are thinking about am I just referencing a certain population of students over others? So

someone was using this example yesterday of a graduate course on Universal Design for Learning, and the Professor in the student's final sort of presentation/report on how they were going to use UDL in their teaching or whatever they went on to do, restricted the amount of writing they could do because a lot of these -- you know, these are all graduate students at a great Ivy League school, and they were all great writers. But by restricting that and saying no, use another format or you can only -- you know, your maximum is a thousand words, what they did is have more variability in learning. So it wasn't just those students that were great writers that were going to be the ones who were able to demonstrate what they know. Students could use multiple media to show it. And actually, everybody achieved a higher standard because we weren't just sort of doing what we often do in higher ed, which is give one strategy that works for sort of our mythical average student, and everybody has to conform to that. So we attend to variability by giving choice.

And we provide UDL options in the materials we present, in the methods, the teaching methods, and in these assessments. So we think about our learning goals as having those three things.

So we won't go into these, but I want to leave you with some resources around this. So on [udloncampus.cast.org](http://udloncampus.cast.org), we have a resource on learning goals. So when we think about learning goals at UDL, what do we mean? So I talked about it a tiny bit today, but that resource will be more in depth.

This is one of the really popular resources on UDL on Campus. It's our UDL syllabus resource, and there's a model syllabus there. It is a great place to really think about your learning goals and then everything that comes after because your syllabus is really kind of your contract with students. It's sort of you laying out how you expect them to get from, you know, what you want them to learn through to the end of your course and learning. So that UDL syllabus resource is a great place to go and think about your learning goals.

And then UDL Universe, which is a project out of the California State University system, has this really interesting syllabus resource with a bunch of model syllabi, UDL syllabi, there for you to see from higher education people that have actually developed these.

So those are some strategies around learning goals that can help you think about how you might make those a little bit more UDL for students.

In this area of materials, what we really want to do with materials is really provide options to ensure accessibility of all materials, media and technology; support decoding text, mathematical notations, and symbols; and promote understanding

across languages. So those are sort of the things we want to do.

So this is an example from our work with the National STEM Consortium, which is a consortium of community and technical colleges building out one-year certificate programs. And what you have here is visual information, multiple-choice questions, where students are supposed to be able to answer which of the graph is a line graph, which is a bar graph, which is a pie chart. And where you have the visual information, you have the opportunity to open up similarly rich and similarly descriptive text representations of that information. So for people who have a visual impairment, for example, and can't access that visual information, they can use text to speech to access the text. But for people like myself who just -- I am not -- I am much better at processing text than I am at processing visual information.

I do it more quickly; I do it better. I have that alternative available as well. So for me, it's not essential, but it's definitely beneficial.

For someone who is an English language learner, they would be able to put that in a translation tool and then have some of the text and some of the vocabulary around this area of math too. So it really has all these benefits when you actually plan for not just presenting media in one way.

This is something we have been toying around with at CAST and is just an example of how you can use open education resources that are out there, open software that's out there to build more accessible technologies. So probably many of you use video in your work. Video is great. But it's often inaccessible. Sometimes when you use the captioning on YouTube, for example, it shows up with all these crazy words, and so someone who can't hear the audio on a video all of a sudden has to, you know, get a poorer, not as nice a representation of the information because the captions are not good. So this is something we have been toying around with at CAST that we pulled from OCAD's flow project, which is an open software HTML-accessible video player, and from Able Player, which comes out of the DO-IT Center at the University of Washington. They both have created open source, so you are able to take these and use them yourselves. You just need someone who can help you, you know, install that in your system. Accessible HTML video player. And I put Temple Grandin's TED Talk in there about autism spectrum disorder. And you have captioning. So you have the video. You have captioning available there. And you also have a transcript, which is an equal representation. It's right beside the video. And it's highlighted. So as Temple Grandin speaks, it highlights the text that correlates with what she is

saying. And it's fully accessible to screen readers. So I could use text-to-speech with this with no problem. And it's really great because by making something that's accessible, you then have a gateway to UDL. So for example, the capacity to highlight the transcript here means that you can sort of connect to dynamic information in the video. So this is just a video of someone talking, but let's say someone was showing a process in chemistry. You would be able to have the highlighted text, and maybe you could put a link in for more background information or put some prompts for some discussion questions to test students' understanding. So just by investing in accessibility, you open up much richer options to actually better understand what students know, give more scaffolds and supports, and this is just the kind of thing that you can -- you know, you can pull from the Web, an accessible HTML5 video player, you know, by working a little bit with someone who does EdTech in your institution, and all of a sudden you've got a much better way of presenting video, making more dynamic, rich learning experiences out of a video than if you just show YouTube videos.

So options for language, mathematical expression, and symbols. This, again, is in our STEM -- national STEM work. You can see that there's glossary terms for terms like denominator that, you know, an English language learner may know in their own language but wouldn't know in English. So we put them into the glossary term.

MathML. So the text-to-speech can read the equations. So I am a screen reader. I don't get to numbers in an equation and all of a sudden I don't know what to do. You use MathML to ensure that that can be read and that will's a text representation of that visual information. So those are some strategies that we use to make sure that we build those supports, glossary terms when needed, text to speech, MathML, so that students can learn, we don't create barriers to students' comprehension of information.

And then just so you know, in terms of resources to support, you have the National Center on Accessible Educational Materials. I work on this Center at CAST. We now have postsecondary and workforce preparation mandates, which we used to just have a K-12 mandate. But it's really involved in two important areas of work. One is sort of the improvement, maintenance, and adoption of robust accessibility standards, including the National Instructional Material Accessibility Standards. So for students who are eligible because they have a print disability, they can get an accessible format, so audio, large print, braille of course materials, and they can get these essentially within two to three days. So you can imagine needing your chemistry textbook in braille, and the NIMAS can

help you do that, and AEM is involved in maintaining these and other standards.

And giving technical assistance to stakeholders on what accessible education materials are and how to kind of ensure the products allow for these.

So what are accessible educational materials? They really have two components. They are materials that are designed or enhanced in a way that makes them usable by the widest possible range of students, regardless of format, so whether they are print materials, digital, graphic, audio, video, they are transformable. So you saw the video player. That's a good example of AEM because that video is now accessible to people who are using text-to-speech, for example. And accessible to people who are hearing impaired.

You want to provide AEM that really pays attention not just to technology, so to the, you know, delivery system, but the information. So the information of the content needs to be thought of as needing to be accessible, and the delivery system has to be -- that's being used to perceive and interact with the content has to be accessible.

So this is a really critical issue because by not doing this, institutions are very vulnerable to lawsuits. So most recently, the Department of Justice entered into settlement with edX, the program that sort of builds MOOCs with many institutions, starting with MIT and Harvard, and what they said is the American Association for the Deaf basically sued edX and said all your materials are not accessible, and you are violating our ADA rights. When the Department of Justice entered into the settlement, they picked up on this issue of AEM, and they required edX within 18 months to address issues that had both to do with the platform, so the edX platform has to follow Web Content Accessibility Guidelines, and the content that gets put into the platform. So I am civics professor X. The content I put in needs to be thought through from an accessibility standpoint. It can't just work for some students. So that's -- more of that is probably coming down the pike. So when you think about accessibility, don't just think about, well, my LMS is accessibility. What you put in that LMS in terms of content also needs to be accessible.

So where can you get some help with that? Because that sounds kind of scary.

If you start with UDL on Campus, we have a whole list of materials.

What about images? What do you do to make sure your images are thought through from a UDL perspective?

If you are thinking about Web, where can you go to get information about that? If you are thinking about video, where

can you go? So we have a resource on each forms of media for you to think about.

Also, we have a resource on understanding what a Voluntary Product Accessibility Template is. So a VPAT is something that vendors -- so I am -- say I am a learning management system provider. I should have a Voluntary Product Accessibility Template filled out which tells you, as the person who is going to decide whether you use my learning management system or so-and-so's over there, how good my software is at meeting accessibility guidelines. So that's a really important thing to look at, and we have a resource on that.

And then we have staff on certain file formats or formats of text, like EPUB, which is kind of standard best technology, best format to use for creating accessible digital text. So those are some things to get started with in thinking about materials and technology that are accessible, and then some other resources are the Access Text Network, which is at Georgia Tech University and is where most disability service providers at various postsecondary institutions connect with Access Text to get accessible versions of text for students who qualify. So if you need braille versions of chemistry books, you can connect to Access Text, and they deal with the publisher to get you that and get that for the students who need it very quickly.

Ally has great accessibility resources as well as lots of information about open-source products, like the HTML5 video player I showed you.

Okay. So another polling question here. What, if any, mechanisms are in place at your college to ensure the electronic platforms and information technology being used are accessible to people with disabilities? Who has responsibility?

>> MINDY LARSON: So if folks could go ahead and share in the Chat box your responses to this question, if you have an answer from your experience.

And in the meantime, I will raise a couple questions that came up, Sam.

>> SAM CATHERINE JOHNSTON: Yeah.

>> MINDY LARSON: So Sherry asked are AEMs for the work forest or only for educational institutions?

>> SAM CATHERINE JOHNSTON: That's a very good question, and so AEM are required in higher education. They are required in K-12. And with WIOA, where you have the new -- you have this new issue around programmatic not only physical accessibility to American Job Centers, but programmatic accessibility, they should be requiring accessible education materials. And regardless, the ADA protects individuals in, you know, a whole range of things. So it's not just, you know, ADA doesn't just apply to institutions of higher ed; it applies to, for example,



NetFlix. NetFlix had to enter into a settlement with the Department of Justice because they didn't have available captioning. I can't remember exactly what it was. But on their tools. So AEM, essentially, accessible education materials are tied to people's ADA rights. So you cannot -- really, by law, you cannot be discriminating against someone in the workforce by creating inaccessible materials. If you had a blind employee and you had a manual that that blind employee could not use and that employee was otherwise qualified for the job, you are violating their ADA right.

So although settlements have not picked up in the workforce in the same way that they have, WIOA now has new language on programmatic accessibility, and there is still a possibility that by violating somebody's rights in the workforce, you are vulnerable to a lawsuit just in the way you might be in a higher education institution.

So AEM is a good thing to do. Not only the stick, but the carrot hopefully is more important, which is you want people to have access to good workforce preparation, and you want a diverse workforce.

>> MINDY LARSON: Another question, Jenny asked is access text network a similar resource to Bookshare which is supported by Department of Education?

>> SAM CATHERINE JOHNSTON: Yes, so I -- yes, I think Bookshare and access text network are similar. I don't know the exact relationship. Access text network is specifically right now for postsecondary institutions, and they have, I don't know, several thousand postsecondary institutions that are members, so I imagine they pay a certain fee to be part of Access Text Network. And then publishers are connected to access text network, say 16 publishers that publish in higher ed. And so if you are at Institution X, you have these students who are using your disability services that need -- you know, that have a print-related disability and need an audio format of a textbook. Access Text will make that happen quickly. Because it's just postsecondary, they have a process for -- you know, say there's a chemistry textbook that's used very commonly across institutions.

They are probably able to access that pretty quickly. So I think Bookshare applies both to K-12 and postsecondary, but Access Text applies specifically to higher ed.

>> MINDY LARSON: So we got a few responses to the question about whose responsibility is it to ensure electronic platforms and information technologies that are being used are accessible to people with disabilities, and generally, the sentiment is that it's everyone's responsibility.

And we had Tabitha said they are currently using an

electronic information team -- I am sorry. They are currently creating an electronic information team, and having the subject of accessibility be included every year. So they are hoping to move and persuade the institution forward.

>> SAM CATHERINE JOHNSTON: That's great. And you know, the Department of Justice settlement with edX is one to pay attention to because there they've really said -- and since then they've had other settlements that are even more, you know, more far reaching, but they basically said it's the responsibility of the person who is building a platform and the responsibility of anybody who is putting content into that platform. So you can't be a professor and be like, oh, I didn't know that I had to, you know, make sure that I transcribed the videos I used or needed captioning with the videos. You are as responsible as the person in the EdTech Office who has selected this particular LMS. So that Department of Justice edX settlement is sort of groundbreaking because it's basically placed the responsibility on the content provider, the content creator, and the creator or the person who is responsible for the delivery system.

>> MINDY LARSON: So I want to go ahead and move along since we have about 15 more minutes of our scheduled time, and I know you've got some more strategies and examples to share.

>> SAM CATHERINE JOHNSTON: Yeah, so I probably will -- let's try to leave a little bit of time, and you know, we'll sacrifice a little bit of getting through all of this.

But in the area of methods, you know, what you want to think about is really selecting teaching approaches that consider learner variability while maintaining expectations that everybody can meet the learning goals. So you want to think about teaching methods that maybe help everybody kind of be involved but that still focus on learning goals.

So one of the strategies we used here in our work with the National STEM Consortium, and I have done a lot of work in case-based learning. And I am going to say I love this work. I love the video learning.

We used this with the TAACCCT program because a lot of people entering the TAACCCT, the students were trade-adjusted workers. So they had great strength in understanding the workforce, but they maybe were also people that had not necessarily had huge success with conventional formal education systems. So might have been coming in with some stress about learning math or some stress about having to do a great deal of reading. And this is an online open education resource. And where we might have taught algebra, this is Jay, and he works with an electrical vehicle company, and all of his algebra skills are contextualized in the story of Jay working at this electric vehicle company and having to use algebra in that

setting.

So where we might have just told that as a case story, as a printed text case story, we used a lot of video to tell the story, and it has captioning and transcripts for people for whom video is not a great mechanism. And all of his algebra skills are, as the story progresses, him having to use those in this electric vehicle company.

This is not going to work for everybody for sure, but we thought about the learning goals, all of the students have these ten or whatever skills in algebra. They are not that they have to learn them through problem sets or have to be able to read all these things or do 15 equations. So trying to match the learning goals with what's going to help motivate your learners and maybe reduce what we call sort of stress and distraction.

So math drill problems for students who have not been successful in formal education might allow them to realize I really like this idea of studying to work in electric vehicle technology, and the algebra is not as scary for me as it might be. So we have a resource on UDL On Campus using case-based approaches that talks about how we did this in the National STEM Consortium. But this idea of offloading the demands of reading by using more video is one thing, and contextualizing and thinking about learners when you try to get them to accomplish learning goals.

Other people have done this work around thinking about their methods, so Colorado State University's Access Project. They basically trained faculty in five college courses to use UDL in their courses, and they basically created a pre- and post-survey that they gave with students, about students' perceptions about how much faculty trained in UDL actually used it. That's a survey you will see in the link to article on this page, you can get probably a copy of that survey, you can always write the authors, but it's a nice validated survey of students' perceptions of the use of UDL. It's not necessarily a great thing for you if you do all these UDL things, but your students aren't even aware of it or you are not even aware of how training faculty members or your staff in using UDL's translated into what students are getting out of it. So what was interesting is they did this survey, you know, they administered it to over 700 students across five courses, and they found that what teachers were changing in terms of their methods after being trained in UDL is they were really presenting course material in more than one way and offering course materials in a variety of formats, which students found really helpful, and teachers were also summarizing key concepts before, during, and after the lesson.

So using the survey as a way of finding out, A, what

teaching methods change when you train in UDL, and also what students find helpful, so what might you continue to emphasize.

I talked about this a little bit earlier. But I think it's important to think when you have sort of a UDL or accessibility in UDL initiative that it doesn't all need to be placed on the shoulders of faculty. You can have other people in the setting taking this on. The College STAR initiative, a large multi-university initiative in North Carolina, one of the things they did is they took tutors that were in these courses that were high enrollment, high fail rates, and they trained those tutors in UDL. Those tutors then gave live and recorded -- they recorded their live tutoring sessions for students, and they also gave the professor feedback on how UDL his or her course was, both from when they were tutoring students and saying hey, they really didn't get this idea, so try to reteach it this way, and the tutors also sat in on the faculties' lectures.

And what they found is that just doing this, so just changing how they use their tutors, training the course tutors in UDL, is that in those courses that use this tutoring model compared to kind of department courses that didn't, they actually had 10 to 15 percent higher pass rates in these sort of high enrollment, low pass rate courses than just if that tutoring model hadn't been used.

So when you think about changes to your teaching methods, you don't need to put it all on the back of one person. You can think about some other people you might train in UDL who are there to support -- you know, to support diverse learners.

Then another thing to think about -- this will be especially relevant for those of you who are disability service providers, you think about the fact that we know that 87% of students with disabilities receive accommodations and support in secondary education. Those same students, only 19% of them receive accommodations and supports in postsecondary. So we have a huge issue with disclosure of disability in postsecondary and use of disability services, and so I talked about this a little bit before, but McGill University really said how do we apply a more UDL approach to the delivery of university services so it changes who comes to use these services and how they use them.

They did a lot of things. They moved to paper-free interactions. For example, for exam services, students didn't have to come into the office to fill out all this paperwork to get extra time on their exam. They could do this via the Web in one simple step.

They rebranded the office so the way it was looked at, a function between the interaction of the individual and the environment, what barrier are we trying to address as opposed to

what's wrong with you that we need to think about. And they changed the way they do outreach, and initial engagement was made much more student centered. There was no disability service provider setting at one end of the desk and students with a big file on the student and the student sitting on the other end of the desk in a first meeting. They could have that first meeting via Skype if they wanted to. They didn't have to come into the office.

And what happened is their request for disability services went up quite dramatically. They more than doubled. And they became much more efficient. So they were much more focused on how do we address the specific functional barrier that we see and we understand?

So they were able to address a growth in use of their services with the same number of staff because their interactions were more efficient, less protracted. So if you think about method, sometimes it's things you do outside the classroom as well, not just in the classroom.

Finally in this area of assessment, there's two areas that we really think about, so ensuring learners have options and how they can demonstrate what they know, and making sure that they know those options are tied to learning goals. So I talked about that a little bit in the learning goals segment. And when there is a single form of assessment where the means are fixed, ensuring universal design of assessments, which is related fields to UDL.

So just to think about this, you often see these kind of learning dashboards that come out of learning management systems that tell you how students are progressing, and you have sort of the course of the whole view here, the class progress, faculty can compare students across, you know, usage variables, across performance on formative assessments that are embedded in the system, and then they can get -- drill deeper into kind of an interaction it's users have with the course.

What I want to stress here is when those environments are really well designed for everybody, you are getting really, really different information back than when they are just designed for a few students. So you know, when you start to think about this issue that we know and we said at the start is tied to persistence, this issue of sort of quality formative assessment and feedback, you really want to be giving that to students on universally designed environments because that's where you are really going to figure out where are there gaps in understanding as opposed to is this environment just showing you where the barriers are as opposed to really showing me where the gaps are in understanding because I've reduced the barriers before giving them a formative assessment or I've reduced the

barriers before their high-stakes test. So I know when they perform at this level on the high-stakes test or at this level on the formative assessment, I am able to capture what they know and the supports that they are using or not using to help them do their work as opposed to I am just capturing what barriers exist in the environment.

And this area of universal design for assessment. So this is really applied mostly to high-stakes assessments, but the work of Thompson, Johnstone, and Thurlow, they basically developed seven elements of universally designed assessments, including things like ensuring there's maximally accessible non-biased assessments, so asking the whole class to answer a math question that uses a baseball metaphor is going to be great for students that have spent their whole life watching baseball, but it's not going to be great for students who don't really know the ins and outs of baseball. So there's sort of a number of strategies here, and you can take a look at those around how you develop assessments that are universally designed for a broader population of students.

Then just on UDL on Campus, and assessment, some UDLs that are helpful there. We have resources specifically on assessments and UDL, how we create assessments when we think about them from a UDL perspective.

We have a resource on using your learning management system to provide better feedback, so how might you structure things in your online course to get good feedback on what's happening learning. Believe it or not, assessments, especially high stakes, are very much connected to emotion. So if a student is overly stressed, they may underperform. So we have a whole resource on, you know, where emotions fit into learning and how you might design to think about that variable in learning.

As I mentioned, the education next generation digital learning environment white paper is important how they are considering all aspects of design and assessment as well.

That's kind of a whirlwind. There's a lot to get through.

>> MINDY LARSON: Sam, this is Mindy. What I am going to suggest is that for those who can stick around for some Q&A, if that is okay for you, Sam, do you have availability to stay a few minutes longer?

>> SAM CATHERINE JOHNSTON: I can, yeah.

>> MINDY LARSON: Okay. Great. So for those who can stick around past 3:30 for questions and answers, please do, and for those who have to drop off, we certainly understand and appreciate you joining the webinar today. I just wanted to remind everyone that there will be a recording of this available on our website. I am going to slow you that slide quickly so you know where to find it.

Here is the slide for other webinars.

There is already a part two to this available online that we did also with CAST, Accessible Instructional Practices: Reaching All Learners, that was recorded last May. So there's a link to how you can access that. But you can also find that link as well as other webinars in this postsecondary education series on our website, and that second link to our webinar's page here. Plus if you are interested in learning about upcoming webinars, you can get our monthly e-news, and there is a link here to the subscription page for the monthly e-news.

Back to the Q&A, we had a couple questions shared, so I am going to go over those and ask the other people with questions, go ahead and add them to the Q&A or type them into the Chat box.

One was actually -- I am going to go back to -- oh, a question from Robin. How will professors be held accountable? When you were talking about professors having responsibility, just like the institution as a whole, for making sure that materials and technology are accessible, Robin raised the question of how will the professor be accountable?

>> SAM CATHERINE JOHNSTON: Yeah, so it's a very good question, Robin, and I think a few things are starting to happen.

So one, this change in this issue of the content, not just the delivery platform, needing to be considered makes professors accountable. So now the Department of Justice has basically come out and said in a settlement very clearly the content creators are responsible. Now, faculty are often those content creators. So if you are a faculty member and using PowerPoint slides in your course and those don't have long descriptions for visual information that needs to, theoretically, a student could say my professor, you know, uses inaccessible materials in my course, and it's a violation of my ADA right. And they're vulnerable. So I think institutions should be well aware in what their legal obligations are around accessibility, and we have a resource on that on UDL on Campus, but they should be making individual professors aware of that. And instructional designers, EdTech offices really need to be focused on kind of quality control to make sure professors are equipped for what professors need to be ensuring that materials are accessible.

So that's one thing that has sort of changed and the heat has been turned up on that issue, which is worth being aware of.

I think the other thing, you know, every institution is different, but increasingly everybody is sort of having to play a role in ensuring student persistence. There's a lot of competition between different postsecondary institutions. So the more you can sort of look at these entities that have connected UDL and persistence and retention, and the more that

persists there, the more that's going to trickle down, at the very least, to deans and department heads being responsible for ensuring that UDL initiatives are in place and that they work. But you will always, in these initiatives, have some people who are early adopters and are the people who just say, you know what? I shouldn't be in this profession if I am not responsible. And so you know, they are going to be the ones who sort of pull other people along. So you know, it's going to vary institution to institution. The fact that these lawsuits now exist and have a focus on content is a big deal. The fact that there is starting to be better research on the relationship to persistence is a big deal. And then, you know, you are going to have some people -- you know, you are going to have some people that are doing it because they see themselves as responsible personally and some people that are going to be the last ones to come on board.

>> MINDY LARSON: All right. And there was also a question earlier that I might need a little clarification on. Alice had asked about other examples. Do you have other examples where looking at -- where they are looking at accessibility at every stage is occurring? And Alice, can you clarify whether you've already got some other examples from the presentation since Sam's gone through her full presentation or maybe share a little bit more about what in particular you are looking for.

>> SAM CATHERINE JOHNSTON: Well, maybe as she is doing that, I can just sort of mention a couple things.

So I think I -- I think you would have to Google exactly what it is, but I think the Tennessee Board of Regents has tried to come up with a really comprehensive accessibility policy for their system, so I think that's a sort of good model to dig into and look at.

And then there are certain institutions that have really sort of come up and thought about these things well. So the California State system has thought about accessibility really well and has sort of some pretty broad policies and checks about how you would address that along the way. So that's certainly worth looking at, you know, Cal State system and accessibility and digging in.

And then another, you know, example of a specific institution I don't know personally, but Wright State University I think is sort of one of the leaders in the country around certainly physical access for students. They've done a really very, very good job of being fully inclusive as a campus, both in classrooms and outside. And their Disability Services Office, if you go and look at it, they have some really good documentation around accessibility, how they sort of ensure that their materials to get student services are accessible. So



those are a few, the Tennessee Board of Regents documentation around accessibility, the Cal State system's got a lot of good work around accessibility, and a smaller institution like Wright State. I think Ohio State University also did some work after a settlement in this area. So there are a few.

>> MINDY LARSON: Did you see Alice's comment that they are looking to know who is having success with the faculty thinking of accessibility from top to bottom.

>> SAM CATHERINE JOHNSTON: So I think those would all be examples, but then the other example I would say, you know -- and we work pretty closely with them -- is the College STAR system. So you just Google "College STAR," it's across four North Carolina universities now, and they are focused on UDL, but they have big focus on read, write goals, text to speech, accessibility stuff as well. So I would take a look at that initiative. And they have some blueprints on their site as well as a whole bunch of training modules for thinking about this stuff.

>> MINDY LARSON: Great. Thank you.

And I just want to acknowledge that there was also some discussion about students -- the transition from high school to college and whether or not students disclose their disability, whether they know -- even know that they have an IEP and have an understanding of their disability, and also a message to students about -- students getting a message that they shouldn't bother disclosing because the IEP isn't followed once they get to college. And there are some good comments shared about how important it really is to make sure that if you are working with students at the high school level or those who are preparing to go to college that you help them understand what their rights and responsibilities are around disclosing their disability and the advantages and disadvantages, primary advantage being, you know, disclosing so that they can get the support that's going to help them be as successful as possible from the get-go.

>> SAM CATHERINE JOHNSTON: Yes.

So a couple resources there that -- it's such a huge issue, and it's so, so, so important. I want to cry when I hear they are being told not to disclose their disabilities. Although I completely understand the need for some students to be able to have control over when and where and how they disclose, especially given the context.

But a couple things. One, I think the Department of Ed's Office of Civil Rights has on their site some good resources just focused on exactly this, this issue of disclosure and how to kind of plan for it and why it's important.

The College STAR initiative I just mentioned has a big component about having students that have disabilities reaching

into -- reaching out to secondary students. They've started a blog talking about why, you know, how it's been for them in postsecondary, why disclosing was important, so that's a nice way of getting students connected to other students.

You have centers like NCSET, the National Transition Center, that are focused on this and I imagine have some pretty good resources there as well.

And someone's put an IEL webinar guide, The 411 on Disability Disclosure. I would see what's available on College STAR.

The OCR has some resources. Then IEL has provided some as well here. And I would think about NTAC. The names always change on these things as well.

>> MINDY LARSON: That's the current one, the National Technical Center on Transition.

I shared The 411 on Disability Disclosure. We have a workbook for youth as well as a workbook companion guide for adults, whether they are educators, professionals working in other service arenas, or family members. There is a whole chapter on postsecondary education transition that really talks about the differences and the importance of self-advocacy. So take a look at that, and then I also just switched to one slide we have on two new resources, including a guide for college students called "making my way through college," and that has a section talking about connecting to disability services at your postsecondary institution and the issue of making decisions about disclosure, as well as a whole range of issues for the transition from high school to college.

And then the final link is a new brief that we did around supporting families of students with disabilities so that they can help to support their young people even as they move into postsecondary ed.

So we had some great resources shared, and I just want to say thank you so much to Sam for taking the time, and also to all of you for joining us and sharing your questions and experiences and resources.

Please do go ahead and share any last thoughts in the Chat box. We'll stick around and look at your comments and questions. Feel free to contact us. My contact information is here at the National Collaborative on Workforce and Disability for Youth.

Sam's contact information was on the earlier slide as well. So we welcome --

>> SAM CATHERINE JOHNSTON: I put it in the Chat box if you need me to.

>> MINDY LARSON: But that's it for today. Thanks, everyone, and have a great afternoon.

>> SAM CATHERINE JOHNSTON: Thank you so much.

(End of session, 3:41 p.m. ET.)

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