Transcript - ASU Remote 2022: Strategies for reducing racial inequities using digital learning

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NORMA HOLLEBEKE: Hello, and welcome to REMOTE, the connected faculty summit. I'm Norma Hollebeke, Manager of network programs and services with Every Learner Everywhere. And I will be moderating your session today. This 90-minute Ask the Experts block by Every Learner Everywhere, which is a nonprofit network that advocates for and supports institutions in achieving equitable outcomes in higher education through advances in digital learning.

This final segment of our Ask the Expert focuses on addressing inequities in higher education, so our last session for the final block Ask the Expert brought to you by Every Learner Everywhere. So during the height of the pandemic, 12 institutions leaned into digital learning and found that despite national trends of racial equity gaps that were expanding at that time, theirs on average shrank. And so in this session, data analysts are going to discuss key findings published in a report called Supporting Student Success at the Course Level: Lessons from change efforts during the pandemic.

So let me introduce our speakers for this session. We have three speakers. For this one. We have Julie Neisler, Barbara Means, and Vanessa Peters. Julie Neisler, PhD in measurement, quantitative methods, and learning sciences. She is a quantitative researcher for the learning sciences research team at Digital Promise. After several years as a practitioner in student affairs in higher Ed, Julie sought to pursue her passions for research and earned her doctorate in measurement, quantitative methods and learning science from the University of Houston.

She seeks to use data that's already been collected by the institutions to identify and eliminate barriers for students historically excluded from higher education. Barbara Means is the executive director of learning sciences research at Digital Promise. She studies the effectiveness of innovative education approaches that are supported by digital technology particularly for racially minoritized and poverty impacted students. Dr. means has authored or edited more than half a dozen books related to learning and technology, including learning online, what research tells us about whether when and

how. She has served on many study panels related to science education for the National Academies of Sciences, Engineering, and Medicine, including the panels that produced how people learn I and how people learn II.

Vanessa Peters is a senior learning sciences researcher at Digital Promise. Vanessa uses multiple methods to study the design and role of technology for optimizing students' learning experiences in school and beyond. She earned her PhD in education with a collaborative specialization in knowledge media design from the University of Toronto. I am going to now hand the floor over to Digital Promise.

JULIE NEISLER: Hello, everyone. Welcome to this every learner everywhere session. Today we're going to be talking about Supporting Student Success at the Course Level: Lessons from Change Efforts during a pandemic. My name is Julie Neisler. I'm a quantitative researcher on the learning sciences research team at Digital Promise, and I get to work with Dr. Barbara Means.

BARBARA MEANS: Thanks, Julie. I'm executive director of learning sciences research, and I get to work with both Julie and Vanessa Peters Hinton.

VANESSA PETERS: Hello, all. My name is Vanessa Peters Hinton, and I'm a learning sciences researcher at Digital Promise.

BARBARA MEANS: We're going to be talking about some work we did as a member of the Every Learner Everywhere network. This network involves 12 partner organizations with expertise in evaluating, implementing, scaling, and measuring the efficacy of education technologies, curriculum, and course design strategies. This network was funded by the Bill and Melinda Gates Foundation to help colleges use new technology to innovate teaching and learning in their high enrollment gateway courses with the ultimate goal of improving outcomes in those courses for Black, Latinx, and Indigenous students, as well as those affected by poverty and first generation students. Next slide. Every Learner Everywhere organizations, including not only Digital Promise, but also Achieving the Dream and APLU, started working in the spring of 2019 with a set of 12 colleges. A nice mix of community colleges and four year institutions clustered within three states, Texas, Ohio, and Florida. And at the bottom of the slide, you can see the particular colleges that we worked with. We started working with them on redesigning some of their gateway high enrollment courses that many students, particularly from those groups we talked about before, have trouble succeeding in.

And when they have trouble succeeding an initial gateway courses, that means they accumulate fewer credits and are more likely to leave college. So we started working with them in spring on how to make those courses more accessible and more effective for students by incorporating adaptive courseware. Then, in fall of 2019, the 12 institutions started trying the adaptive courseware and some of their redesigned courses. And we continued to work with them each semester through the spring of 2021 in a continuous improvement process where revisions were made and outcomes were measured every semester.

Now, of course, during this time period, you may notice a little thing happened like the COVID pandemic. And that was a great challenge for colleges everywhere. But with the Herculean efforts of the faculty, staff, instructional designers, institutional research office and leaders at the institutions we worked with for Every Learner Everywhere, the implementation of adaptive courseware we found really helped them weather the pandemic.

JULIE NEISLER: And now we're going to attempt to summarize 2 and 1/2 years of project in about 10 minutes. So first, where we started and a great contributor to our success was that institutions each designated a project lead who assembled a cross-disciplinary team. So all those individuals Barbara just mentioned were on the initial team. We pulled in individuals from teaching and learning centers, students, faculty staff, tutors on campus, lots of different institutional research members, just this cross organization team in order to think about implementing adaptive courseware.

And so many of our instructors and institutions had worked with instructional designers on a one on one basis. But this was the first effort for many of them to really work on this collaborative group to redesign courses together, really centering equity and student success at the center. And so at the start of the engagement, one of our big things was thinking about data. And so we collected data early and often. And we wanted to not just collect data, but we also wanted to disaggregate that data.

Many of the faculty that we worked with were aware, generally, of their general success rates and students who were passing and not passing, but they didn't really have access to and hadn't had a chance to reflect on what that data looked like disaggregated. And so we know that was a big portion of how we did our work. And Vanessa's going to talk us a little bit through more about what that data was and how we progressed in our project.

VANESSA PETERS: Thanks, Julie. As a partnership continued, the team developed guidelines and held convenings to support their collaborations and the institution's continuous improvement efforts. An instructor survey in 2019 revealed that the majority of instructors felt adequately or very well prepared to implement the adaptive learning courseware in their classrooms as a result of their participation in every learner. In their survey responses, faculty also reported using evidence based instructional practices such as using formative assessments, connecting course content to students' lives, and providing students with opportunities to reflect on their own learning.

Interviews with faculty teaching redesigned courses found that they fared better during the pandemic when transitioning to remote learning. In their interviews, instructors commented that using adaptive courseware made it easier to transfer lessons and homework to an online environment. In some cases, instructors created additional resources that supported the content provided by courseware. Instructors also noted that using an adaptive system made students feel more comfortable when working on challenging content.

The advantages of having used courseware before the pandemic were similarly noted by students. Students who used adaptive courseware before moving to fully online instruction found it easier to adapt to the changes. In particular, students appreciated it when instructors broke the lecture material down into manageable, bit-sized pieces. Students also described feeling more comfortable learning online, and felt that adaptive courseware presented content at just the right level of difficulty.

JULIE NEISLER: And so where are we finished. All in all, 193 faculty completed implementations in 62 unique courses experienced by over 26,000 students. So over 26,000 students participated in these courses that had included adaptive courseware, participated in this equity focused redesign. And so overwhelmingly 96% of faculty agreed that the adaptive courseware helped students improve their learning and helped faculty monitor student progress and hold students accountable.

Additionally, they thought the courseware helped them present course material more effectively, increase student engagement, provide students with timely feedback, and help them monitor the progress of the class as a whole. And one really big takeaway that we were very proud of is regards to our net promoter score. So the equation for that

you can see on the bottom right of the slide. And so really, we're just looking at the faculty or strong promoters.

And we know it takes about three semesters for faculty to really get the hang of the courseware. And we can see that in their ratings. So these scores range from negative 100 to positive 100. In our first semester, fall 2019, we had a net promoter score of plus 23, which is pretty good. But as you can see, a year later, three semesters into the project, our net promoter score was plus 46. So faculty really did see these positive impacts of the adaptive courseware on the students.

And we also saw it in their course success rates. So before we started in pre-implementation, we had about a 66% pass rate. But when we disaggregated that into racially minoritized students and non racially minoritized students, we saw that there was a gap of about 14%. We saw that gap persisted the first semester, which we know it takes some time to get used to the courseware, so things maintain the same.

But then again those three semesters in, we see that gap decrease from 14% to about 10% And so we see that the adaptive courseware is closing the equity gap in terms of achievement between racially minoritized and non racially minoritized students. And this is just one of the many successes. But we learned a lot of things from this project. And so Barbara is going to take us through some of those lessons learned for future engagements.

BARBARA MEANS: Next slide. So after this 2 plus years of engagement with these 12 institutions, we feel that the relatively deep involvement we had with them was really quite successful thanks to their efforts. And there were certain ways in which this was structured, which we think really added to the success of the effort and that other efforts in the future could take advantage of. And one was really treating teaching and learning as a team sport, encouraging teams of faculty to come together and to collaborate on working on the same course or making similar changes in different courses, but supporting each other through the process of learning about adaptive courseware.

We also think it's important to provide things that make it easy for very busy faculty to engage in this rethinking about how they're teaching and learning and using new tools in their classes. So the fact that there were external facilitators that set a pace for meetings and made them organized and efficient was really helpful for faculty in focusing their time and making sure they had a schedule. It was also helpful to provide

incentives like small honoraria for participating in the effort or the opportunity to present a professional conferences.

As you may have inferred from the findings that Julie showed, data was very important to this effort too. We collected data on every semester of implementation, and we were able to see changes as the course design changed. And we provided that data back to the teams who were working on the course so they could see what their progress looked like for their students, and for disaggregated data from the students in their particular college and course.

It's also important to design engagements to be long enough for change to really happen. Too often, people think a single workshop is going to make a profound difference in teaching and learning, and that just rarely happens, at least not at scale. We know it takes time for these things to occur, and practice with feedback is important for complex skills such as teaching. So this was something we saw as the faculty progressed. We also saw it became something that was expected within some of the departments. They got used to meeting together to look at their data and decide what to do about their courses. All of this informed by an equity lens, which we brought to the disaggregation of data.

The hope is, and in a number of cases, this appears to be happening, that some of these processes are being adopted within departments and by other departments within the same institution. And this kind of prolonged engagement, we think, is really important to spurring future progress in teaching and learning with that goal of improving outcomes for underserved students.

JULIE NEISLER: So thank you so much. Those were the broad strokes of our 2 and 1/2 year engagement with these institutions. We learned a lot. We've shared a lot with the field and we would love to answer your questions. So please let us know any questions you might have, and we'll be available for the rest of the sessions to answer those. Thank you so much.

NORMA HOLLEBEKE: Thank you, Julie, Barbara, and Vanessa. Barbara and Vanessa weren't able to be with us today, but Julie is here to field your questions and I'm sure she can answer the toughest of questions. I do see that we have a few coming in through the Q&A. And I encourage our audience to continue adding questions on Q&A or into the chat. So our first question, is the decrease in the achievement gap over three

semesters as simple as saying faculty are getting better at implementing and working with the new course tools and course design?

JULIE NEISLER: As simple! Norma, nothing is as simple as faculty getting better and implementing and working with the courseware. I do think that is part of it. So we know in the first year, you're trying something new. You're just trying to get it done. You're learning where all the buttons are, trying to see what is this dashboard telling me. What does this time on task indicator actually mean? I'm really getting a feel of it.

And then your second year you do it better. So you've reflected on what you've learned, what you've improved on, and then you start finding those ways in which you can improve that outcomes. And then the third year, you do it amazing. That's your rock star year. And so we know by that time faculty are doing a better job implementing the adaptive courseware, seeing where it aligns to their curriculum. But in the instance of this process, we know it was not just implementing the courseware.

There was a pandemic that happened. And so as we talked about the efforts of the faculty and staff that we worked with, and it was amazing. So in terms of taking over the onboarding of students into these different platforms and systems, we know there was a lot of work by institutions to hand out-- what is it? Laptops and hotspots, find places for people to charge during this pandemic, and all these additional resources. And so we know that student success is not just the courseware or just the faculty or the curriculum, it's the synergy of all of those things.

And so I would say it was not just they got better at it, which they did, but I would say it was all of those things, coming together.

NORMA HOLLEBEKE: OK, let's shift-- can we shift that then and say, OK, the faculty got better after a few semesters as well as pedagogical changes and things. So what about the students? If I remember correctly in-- and it's been a while since I read the report. The report highlighted that the first term or the first couple of terms of using the adaptive course, where the students were not as comfortable with it either, and they had some issues as well.

So by the third and fourth term using it, they were so-- what is the deal with the students? Because it's a different student, or it's a different population of students coming in from one semester to the next. What is attributing to that improvement on the student side?

JULIE NEISLER: Yeah, I think it was a couple of things. So first, I think the faculty got better at onboarding students. Before they were just like, we're trying this platform. Sure, it shows up in our LLMs, but let's figure out what we're doing. But as faculty got a better handle on it, they could better orient students how to work in the platform. And additionally, we saw a lot of these institutions scale this work. So if you were implementing and say, I want to start with my intro college algebra class, and they say that's amazing.

OK, what about the next college algebra class? We're seeing improvements there. Let's keep it going. And so for example, if you were using a courseware in the first course of your career path or path within your major, you might keep using that same courseware. And so these students get much more comfortable within these platforms and within the systems. The faculty are getting better at onboarding them.

And we know vendors also did a ton of work during the pandemic. Things went online, faculty and students were adopting things at a rapid pace. And so the vendors also did great in terms of putting up videos and how to guides and all these things. So I think it was a combination of the students, getting better, understanding how to navigate in this environment, faculty doing better at onboarding them, and vendors providing that support.

NORMA HOLLEBEKE: OK, another really interesting question here. What example can you provide about how student persistence rates evolved over the course of the semesters?

JULIE NEISLER: So we actually didn't get a chance to look at student persistence rates. That was one of the things we struggled with. We really wanted to track them through career paths. But for example, so a lot of the institutions we worked with were community colleges. And so we know from conversations, we did interviews with faculty and students. A lot of them said, I feel so much more prepared, I feel confident, really harnessing that identity of being a college student and being someone who can be a college student and be successful in college.

And we know many of those students went on to transfer to their four-year institutions. And so while we don't have actual data or hard data in terms of numbers of persistence rates or improvement rates, a lot of our conversations with faculty and staff said it's absolutely improving student self-efficacy, students' identity of feeling like they belong in college, and then helping them and seeing that persist over time.

I will say not necessarily persistence from semester to semester, but when the pandemic hit, and we all went rapidly online, we were in person, people went on spring break and they said, you're not coming back, you're going to be online now, the faculty that already had this adaptive component, which was an online component, we might think of more of a hybrid scenario, those students transitioned easier.

So we know that the students were able to persist during this rapid shift because they were already familiar with an online environment. They were already familiar with going in and doing their homework and these regular cadences of oh, I do my formative assessment, and then I study, and then I do a self-check quiz, and then I study more, and then I have my online final quiz at the end of the week. And so we know that helped as well.

NORMA HOLLEBEKE: So let me see if I get this question right. Our audience member says my observation has been that pulling data from courseware and using it to make adjustments is the last skill developed by faculty redesigning courses around digital learning technology. Does your study bear that out, or did that even come up or did it not come up?

JULIE NEISLER: Yes, so that did come up. I don't know in terms of the ranking of skill, whether it was first or last or where it came, but it was definitely something that faculty had to practice. So a lot of times faculty, unless you have a pretty robust internal dashboard, whether it be in your LLMs or student information systems, the dashboards in these platforms might be new to you. And so thinking about what are they and then how do I use them. And so that was some of the professional development Every Learner Everywhere did. And this is always something we tried to scaffold.

So for example, if you say, oh, I have this student who is taking quizzes a lot and doing seven or eight times and not passing, and they just keep not passing, what do I do with that information? And so in that case, we might say, OK, so you see students are taking this multiple times, they're not passing. Where is that metacognition at for the student? Is the student reflecting on how they did, seeing that they didn't pass, thinking, oh, OK, I need to go back and review or go learn or fill in the gaps of what I don't know. and then take the quiz again.

Not continuing to take the quiz over and over and then hoping, oh, next time it's going to pass. And so a lot of that was working with faculty to say, OK, what is this data? How

am I making meaning of it? And then what do I do as a result of that? And we know that's something that we scaffolded. We know that it's a difficult thing to do, particularly when faculty have several hundred of students across these lecture courses. But we know that using that data and using that data to intervene in order to support students when they need it is by far one of the most impactful outcomes for students.

Like we've seen testimonials over and over, students saying, I had a faculty member reach out and said, they noticed that I really struggled with the last quiz. And so oh, that they noticed that. And so then I changed something that I did as a result. And so the student saying, oh, I'm seeing this reflected. And then I'm able to change what I'm doing as well. So, the joke is the courseware is adaptive, but students and faculty also need to be adaptive.

NORMA HOLLEBEKE: You brought up professional development. What was the main focus of the professional development for faculty as it offered in the way that allowed the faculty to attend to all of the responsibilities? What did every learner focus on for that? How did the faculty respond during the professional development? Give us some insight. Just give us some general insight about how that impacted what you all were also seeing with your data.

JULIE NEISLER: Yeah well, Norma every institution is the same. So of course, we did the same thing everywhere. No, no, that is absolutely not what we did. So in terms of providing professional development, we asked the institutions, as we're thinking about this, we have our expertise of what it means to implement adaptive courseware and do continuous improvement, but you are the expert of your campus, and you are the expert of your students and your faculty and your staff and your teaching and learning centers. So let's work together to figure out how we can do that. And so it varied across campuses.

So one campus said, hey, we'd really like to pull the tutoring center in more, but they don't really have experience looking at these student dashboards. Like, how do we figure out how to make this cross-functional relationship work better? And so that was something we figured out, OK, how can we integrate the teaching or the tutoring center, the faculty, and the student to figure out how do we make this synergistically work together?

On another campus they said, hey, we have 43 different part time faculty and thus they are teaching 43 different courses. How do we make sure that everyone who is coming out of college algebra has learned everything that they need to go to be on to intermediate algebra? And so one of the things we work there was thinking about, OK, what are your main learning outcomes that you really need to hit? How can you scaffold that for faculty? Faculty all have their own unique ways, but at the end of the day, we all still need to learn that y equals mx plus b.

So how do we take these consistent learnings and lessons and learning outcomes that need to be covered, and then provide the flexibility for faculty to teach in the way that they feel comfortable and confident. And so those are just two examples. But we did-- upto 12 institutions, we did 12 different sets of professional development trainings to try and just meet their needs. The same thing with students. We try to assess where they were, get their feedback, rely on their expertise because they know what it's like to teach in those classrooms every single day. And then just provide the support that they needed to get them where we knew it would be a good next step for the project.

NORMA HOLLEBEKE: Yeah, that's one-- I did hear that earlier in a session from University of Arizona with their faculty learning communities. They said one thing that they learned with that was it's not a cookie cutter thing. You can't do one size fits all. So that actually complements what they were also learning about theirs. Another audience member asks if you would elaborate on the 14% gap that you found among the success rates.

JULIE NEISLER: Yes. So that is one statistic out of many that were provided in the report. So we have lovely Patty who's on the back end, who I'm sure I'm not looking at the chat but is posting that report in. But that was just one example right. So we know that these gaps exist. Robert just talked about disaggregating student outcomes. We unfortunately did, in order to get sample sizes high enough to do statistical analysis, did aggregate, some of those racially minoritized status.

And so that is one disaggregation where we looked at white students versus racially minoritized students just for the overall project. We also disaggregated by different race ethnicity categories, Pell eligibility, if students were traditionally aged versus non-traditionally aged, really trying to see how are these students succeeding. And so that

was one that we picked out. We saw that when we just looked at unadjusted pass rates, it was about 14%.

We saw decrease, which was really exciting. And we know this work has continued on these campuses. And so we're starting to see these impacts really not just for students overall, but for our particular population, so those racially minoritized students and those poverty impacted students.

NORMA HOLLEBEKE: OK, I'm going to throw a question at you that was given to Robert, and he qualified that he's not the data person, but he gave us his interpretation of it. So what is the first data type an institution should disaggregate to center equity?

JULIE NEISLER: Oh. I loved what Robert said actually. I messaged him on the back end. I said that was perfect. So it really depends on your institution and what matters to you. My first thought would be graduation rates. So we know that there are many, many students who enroll in our institutions and end up stopping out. The amount of student loan debt that they take on can be massive, can be burdensome.

And we know that without that credential, without that certificate or degree or certification, they are unable or less likely to get that job achievement, get that career attainment that would allow them to pay off those loans, that will allow them to achieve what they had hoped to achieve by attending and enrolling in the institution. So that is the first thing I would disaggregate, those graduation rates.

And then I think you both need qualitative data and quantitative data. So as the numbers person, everyone says, oh, quants amazing, which it is. But you really need those student stories. So talking to the students who did stop out, who didn't graduate and say, what were your barriers? How do we take this data that we're already collecting, gather some information about it, and then who do we go talk to make meaning? So I would say disaggregate that data you already have thinking particularly of graduation rates, persistent rates.

And then go do qualitative data, do focus groups talk to students and help them identify what those barriers are so that you can eliminate them, because right at the end of the day, we want all of our students to be successful. And we know they're not showing up to college fully aware of what our different systems are and how to navigate the different paths that we set out. So being there and providing the supports that they need in order to help them be successful. Because as Robert mentioned, we know that's what they want to do.

We know these students are coming, they want to learn, they want to grow, and improve and achieve. And we are a wonderful, amazing field that gets to help them do that. And so I don't want to end on too sappy a note, but I'm feeling real inspired here.

NORMA HOLLEBEKE: I'm going to ask for just a short answer if we can-- I know that that's not possible. So with that in mind, if you had a college professor come up to you and say, I'm an English professor, what do I know about data, you're telling me to disaggregate data and look at data. What one thing would you tell them about qualitative data that they could do to help make a change in their class?

JULIE NEISLER: I would say ask for it early and often. So if you are interested in gathering qualitative data, I would start with an early a pre semester or early semester survey just to understand better about your students. Ask are they guardians for anyone? Are they parents? Do they have to take care of their parents? Do they work full time? What are some of the struggles that they think they had? What are some of the things they think they need to succeed? So asking those questions-- and then one of my favorites is every other week we have a faculty member who would ask, what helps you learn best this week?

And so it one encourages students to really employ those metacognition skills. So thinking about, huh, what did I learn this week, and what helped me? And then so the faculty can then do those things more. And so students have just reported saying, hey, I really love that you not only asked me, but you made changes because of what I said. And so I think that's just, I mean, amazing and qualitative data early and often. And once you show and build that trust with students, I think they are happy to share their experiences because they want the class to be amazing, too.

NORMA HOLLEBEKE: Well, thank you very much, Julie. You have inspired us all to not be afraid of that quantitative or qualitative data. A big thank you to all of our presenters throughout all of the Every Learner Everywhere sessions, as well as all of the sessions throughout ASU REMOTE summit. Thank you for joining us. That concludes the formal session of the third annual ASU REMOTE summit.

We'd love for you to join us in the virtual happy hour starting right now. Head over there through the summit portal so you can find it there on one of your tabs. Go to virtual happy hour, and let's all celebrate what we've learned this week. Have a nice day.