

Speaker 1: Good morning, everyone. Hello. Sorry for the delay. I'm so happy to introduce you to Randy Bass. Randy Bass is vice-provost for education and professor of English at Georgetown University where he leads the Designing the Futures initiative and the Red House Incubator for Curricular Transformation. For 13 years, he was the founding executive director of Georgetown's Center for New Designs in Learning and Scholarship, Georgetown's faculty and graduate student teaching development center. Kind of like our [TEP 00:00:39], but with a significant research arm into student learning.

He has been working at the intersections of new media technologies and the scholarship of teaching and learning for nearly 30 years, including serving as director and principal investigator of the Visible Knowledge Project, a five-year scholarship of teaching and learning project involving 70 faculty on 21 university and college campuses. From 2003 to 2009, he was a consulting scholar for the Carnegie Foundation for the Advancement of Teaching where he has also served as a Pugh scholar and Carnegie fellow.

His is a deeply human, holistic vision for what higher education can be, and he's had enormous success creating transformative learning experiences in spite of potentially constraining but entrenched institutional structures: the classroom itself, general education requirements, the very unit of the course.

My first vision plan as TEPS director ended with lengthy passages from a keynote address Vice-Provost Bass gave at an AACNU conference. He inspired me to imagine what it would really mean to center student learning and faculty teaching at the University of Oregon. I am so honored that he came all the way to Eugene to meet the wonderful faculty at the forefront of our teaching mission. Welcome, Randy.

Randy: Thank you very much, Leah's wonderful, generous introduction, and thank you for inviting me. Good morning.

Audience: Good morning.

Randy: I was last in Eugene when I was 14, so I'm planning on being here every 14 years. It's really wonderful to be here, and it's wonderful to be part of your week. For many of you who are part of this longer, fuller more interesting program, and I hope that what I have to say will fit into the rich conversations that you're having. You all can hear me well enough [inaudible 00:02:50].

I always want to start with asking the biggest possible question, and I know that at some level, it's in everybody's mind, but we're all so busy practically getting from class to class, semester to semester. But this feels like a particularly poignant time to be asking that question, and to be asking it perhaps this very moment in history for all kinds of reasons, both because of what's ahead and because of what we now know and because of some of the tools we have at our

jest, the people that we serve and the problems they will face for the rest of their lives. Whether or not higher education has to actually pass more of this.

I'm not saying we have to work harder because everybody's working probably as hard as they can. Students are maxed out. Faculty are maxed out. Systems are maxed out but it's very much we really need to ask for more, expect more of what it is we need to be doing. So that just sort of lingers in the background of what I want to say.

So the argument that I want to make and the proposition I want to throw out to you this morning is that higher education needs to be about this quadrant. I have a two-by-two construct that I've built for you, and like all two-by-two constructs, you want to be in the upper right when you're done. So this one is no different. Where I'd like us to be and where I want to talk about is the quadrant that sits at the intersection of inclusive learning and inclusive education and the degree of learning. As best, I understand it, this is exactly where this week for all of you is very much sitting.

So I think that this is the single most important tension of our time in terms of education. All the noise and other things that's been going on the last several years, starting with the kind of loop of madness of 2011, 12, 13 and other things. The tension is not between profit and for-profit, nonprofit and for-profit, or online and [inaudible 00:05:14], or big and small, residential and non-residential. It's between really whether you fundamentally believe in an integrated vision of education or in what I have totally non-judgmentally called a disintegration of vision.

This is how I see it. I'm going to parse this. Incidentally, I will absolutely make not only all my slides available, but [inaudible 00:05:44] also anything that comes up now in the workshop [inaudible 00:05:51]. These are the two paradigms. So on the one hand is this what I call disintegrated vision. It's really simplest by just saying that this is a vision that believes that in education is very aggregationist. There is a series of granular histories often very targeted. So it might be based on sort of competency-based learning, or it might be learning decoupled and formal boundaries of all the discourse about learning names anywhere the last few years and a lot of times this would actually serve.

I've seen students actually doing worse [inaudible 00:06:34] environments.

It's based on analytics that narrowly track learning. So you could be disintegrative without technology but in many ways this side of the chart is really also very much has driven a lot of the work that has come out of silicon valley and drifted into digital revolution. Whether its the mook movement or other things like rita.com or Udemy or Code academy and Khan academy and all the many things that have filled into the web based state. It's been very much driven, often times by adventuring into the space, has been driven by the sense that what technology can do. It can scale teaching, it can automate teaching, and something besides producing structure costs and that's why four billion

dollars of venture capitalists [inaudible 00:07:47] online space in the last [inaudible 00:07:49]. Which is very stunning.

So on the other side we have an integrative vision of education which is one I'm sure is very familiar to all of you in this room and it's just the idea that education is more than just discrete pieces. Education has an art to it. It's the belief that there's something about both the curricular and co-curricular that fits together into a whole vision. It's that we're not just teaching content it's that we're not just teaching knowledge and skills but that we're actually teaching something that we might call dispositions or traits and that we're fundamentally teaching people how to make connections, have themselves integrate and in that sense we are teaching to the whole persona which I'll talk about in a moment. So I want to be super clear that this is not meant to be a chart of good and evil even though I may have set up it up that way but I really don't mean it that way. I actually think that the things that are on the left that are specially driven in digital context are actually some of the most powerful things that have come about in education the last few years.

The point that I want to make is that if all that you think education needs to be is what is on the left then you're operating with a diminished vision of learning because there's been as I say hundreds of millions of dollars of venture capital pouring in on the left all the time. Literally hundreds of dollars pouring in, venture capital, on to the right. The phenomenon that I've written about, my career long collaborator Brett Einin is sort of my counterpart at LaGuardia Community College, and a book we published a year and a half ago. We call what's needed re bundling so in contrast to the unbundling discourse which believes that all kinds of aspects of college can be unbundled teaching, learning discrete pieces. What we need is re bundling is that we need to figure out how to put what's on the left in the service of what's on the right. That in fact is really the primary project of the next ten or twenty years and that if we're going to deliver a robust transformative education equitably and democratically. The only way we can do that is by figuring out how to put what's on the left in the service of what's on the right.

So that lingers in the background for me. These are some examples of re bundling at scale and then I'll move on to a different construct. Things like habitable worlds which is an amazing project that you may have heard of out of Arizona state. Hundred percent online science course for non-science majors but is really based on the principles of inquiry and introducing students to science through continuous inquiry and they've done a brilliant job of bringing together analytics, simulations, virtual field trips, human mentors, inquiry driven questions, social learning all into a single space.

What I would consider an act of re bundling or at LaGuardia Community College where they've the near impossible which is that they've managed to get students now through remedial or developmental math and college credit bearing statistics in one semester. Which is almost unheard of at community colleges using again a combination of an analytics program like ALEX but also

addressing the social emotional side of people who struggle with math, using big challenges like climate change and food justice aligning even their intro statistics course with big college outcomes like global citizenship inquiry and integration.

Again what I think of is taking those things that are on the left and putting them in service of what's on the right. Alright so it's not just how do we get people through stats. It's how do we teach more people inquiry as early as possible or the great work that's being done by the John Gardner Institute through one of their projects called Gateways to Completion which Ron attended a couple years ago. That was the one I think was in Las Vegas which was the weirdest possible place to have an academic conference.

Where they take an evidence based approach to help the course with the highest DFW rates and do amazing work. That's also apart of the ethos of the university innovation alliance. Which is one of the greatest things that came out of the Mook, the rise and semi-fall of Mooks was that it kind of kicked higher ed in the rear and the University Innovation Alliance of which Oregon State is certainly one of the leaders of that where they're sharing their failures and successes with each other along the same lines trying to address the courses with the highest failure rates.

Those are all just big scaled versions of re bundling though there's lots of ways to think about it and I hope a much more robust frame will become clear but I wanted to give you some concrete examples early on. So that's how I get that axis. That's how I get the disintegrative-integrative axis of my two by two.

Now let's get the other axis which I have labeled inclusive excellence which is a term that I'm guessing you are familiar with I think it was coined AACU almost twenty years ago. Picked up by lots of people HHMI, etc. but the belief that there is no such thing as excellence that isn't inclusive and that everyone deserves to be thought of as deserving an excellent education. That excellence is not just for the best prepared, best resourced students. So what's on the other end of inclusive excellence. Whoops oh sorry. This is the hazard of not standing behind my presenter view in which I can see what's coming next. So I'm sacrificing linear flow for human connection. So if that happens again just remember that.

This is the chart that motivates me and a lot of my colleagues. This is a chart that shows how little higher education has done to move the need along so inequality the last forty years. There's now finally a little bit of an up tick in that last quartile but you can see the percent of lowest quartile students who attend higher education has hardly moved in the last forty years. It's really stunning and there're ways in which one could also argue that higher education contributes to social inequality.

So that's why inclusive excellence matters. What's on the other end from inclusive excellence? Exclusive excellence, not a term you hear. You won't hear

anybody use that term in higher education. Exclusive excellence is what college was in the United States for like two hundred years. That was just college. Well prepared, qualified, well resourced people went to college. That's what an exclusive excellence was. If you google inclusive excellence you will find three hundred and fifty thousand hits to a AACU etc. If you google exclusive excellence you will find links to luxury resorts in Mexico. Right? Not a phrase we use but it's kind of the hidden other end of that axis. So I think it's interesting to map the higher ed ecosystem on my two by two grid, my matrix. I would put some of the startups and disruptors sort of out there. Out there in the sometimes very inclusive space and sometimes not. Some of the for profits are kind of notorious for that but often very disintegrative.

A school like Mission U is about a little bit over a year old targeted poor working adults to teach them coding, UX Design things like that. Takes about year to get a certificate, no tuition until you get a job that pays you fifty thousand dollars a year or more and then when you get a job at that salary if you get a job at that salary you owe them fifteen percent of your salary for three years and that's your tuition.

I just met another guy from the MAKE School, CEO of the MAKE School in San Francisco, similar kind of place but very robust model. Very focused on computer science. Your tuition you don't pay your tuition until you graduate and your tuition is based on the delta of increase between the job you had when you entered and the job you have when you leave. So your tuition is actually based on how much more you make when you leave.

So I'd put them out there. Minerva University which many of you may have heard of. It's based in San Francisco though the students end up studying in seven different capital cities around the world. They claim they are the first elite university founded in the United States in a hundred years. Unbelievably integrated curriculum almost makes up vice provost for education. Wepau integrated and connected their curriculum but they're definitely down in that corner. I'd put most liberal arts colleges and universities somewhere there on the integrative side of the line and towards the exclusive end. I'd put most open access and public institutions sort of in that spot. Though it obviously varies but I think there is a lot of pressure pulling people into this quadrant. So for example Georgetown is one of over a hundred institutions that belong to something called the American Talent Initiative. Which were committed to increasing the number of low income first generation students that the most selective schools in the country graduate by fifty thousand by 2025.

Meaning we graduate fifty thousand more each year once we get to 2025. So that's kind of pulling people up into the inclusive space. I think there's a lot of things including all the things that you're talking about this week that are pulling open access and public institutions toward the integrative end. All the work of AACU around high impact practices, first year communities, seminars, even in community colleges these are all things that are pulling toward the integrative end for schools that are already very inclusive but there's of course plenty of

things pulling in the other direction. Declining state funding, stupid politicians, competing agendas a lot of things pulling toward the disintegrative side.

You know there's probably some interesting examples of people who sit squarely in that university in Minnesota. Rochester one of the innovative campuses, university of Minnesota systems, Station One just opened this summer founded by the former Dean of Engineering at MIT Christine Ortiz. So what do you think about UVO in this matrix. Give you a few minutes to talk to each other at your tables. You could place all of U of O somewhere in the matrix or you can think about how in any campus there's probably different programs you would map. If you are mapping different schools or different programs but I'll just give you a few minutes to talk at your tables. Think about either all of U of O or your own program in relationship to that matrix. Talk amongst yourselves.

In the interest of interactive pedagogies, maybe just one or two people would like to just make a comment at the top of their lungs of just what you were talking about. Where you would put U of O or where you would put your program. Just a couple people want to volunteer something that got said at their table or volunteer somebody else at their table to say something.

Mkay

Speaker 4: We sort of feel like University of Oregon is like, I don't know about the student experience but the structure we are naturally decentralized. [inaudible 00:20:32] organized in a series of small people. Absolute power over our people. It's very very difficult to achieve anything integrative with this kind of structure.

Randy: Okay So the actual structure of the university militates against a more integrative structure.

Speaker 4: Yeah I don't know if it's a complete failure.

Randy: Well that's good to have hope and optimism. He said that he doesn't know if the failure of integration is complete just a strong tendency.

Yeah?

Speaker 5: Could you repeat what someone says so that we can hear it in the back?

Randy: Yes absolutely he said that the decentralized nature of the university into very siloed, that's my word not his but that was his implication, very siloed fiefdoms makes integration very difficult just from the get go. That just structurally it militates against integration.

Anybody else want to make a comment? How about on the learning side? Yeah.

Speaker 6:

So I think that the issue of integration or integrating is something that I would like to hear a lot more of a discussion about after we have had so much emphasis on institution on whatever. We hear diversity but that issue of becoming that thinking, reflective person not just mastering all these skills but being or learning this life long skills but I kind of don't want the word skills in there because I think it... Obviously there is a place for that but it focuses on can I break words apart? Can I add up these numbers? Stuff like that but it sounds like approach life and reflect on it, doing more comparison and contrast but making these students compare and contrast across wildly different things. That might not be part of my core syllabus like how does this relate to what you are doing in your math class today?

Randy:

So to repeat although it occurred to me I could have handed her the microphone. Again an important lesson for all of you don't pass up the opportunity to make technology work in your favor?

She would like to hear more discussion at the university about the integrative learning part. That there's more of an emphasis on inclusion and diversity. Inclusive pedagogies but not as much as she'd like to hear around what we really mean by integrative learning beyond just basic skills and content or targeted learning, but crosscutting connective. Connecting life to learning etc.

Is that an accurate? Yeah

Well great I'm going to continue. I have so much material to cover I must continue my lecture on learner centered pedagogy.

So many people have suggested that the matrix, or some people have suggested to me that it needs a Z axis of quality. So once you've identified, it's not just doing work that's inclusive and nod to integration but what we should really be focusing on is the Z axis. Which is how we maximize the value of both of those. Which is one thing that would come from a feedback loop of learning designing learning assessment which would be an interesting conversation in itself but I'm interested in that Z axis or what does it really mean to go back to my initial question, whether we should be expecting more, what does it really mean to think about maximizing the value of those two axes.

So this is where I want to talk now about what matters in this quadrant and especially what matters along that slope. To me the place that this now has to begin in 2018 or in this moment has to begin with machines that I don't think were talking enough about. So this is work started back in the early 2000s, Levi and Renee updated it with a very accessible thing you can find on the internet called dancing with robots. A lot of people are talking about this now, just asking the question what is it that humans do that machines can't do as well? What can machines do better than humans and in fifteen or twenty years what jobs will be left to humans? Right, and it's profound when you think about, if you have traditional aged students, their careers will be peaking like in the 2040s. In case, you're wondering how I calculated when somebodies career peaks, it's

whatever age I am right now. The world is going to be, our students world will be profoundly reshaped by artificial intelligence and how were teaching them now needs to be inflected by that.

This is all the work that will be left to humans. Unstructured problems, working with new information including complex communications and carrying out non-routine manual tasks then there's some low level menial tasks but basically that's all that's going to be left to humans. Everything we should be doing is preparing students for those jobs. There's a lot of people doing it just in work. Daniel Susskind wrote a book with his father Richard Susskin, his good Ted talk but he talks about the basics of the history of this which goes back to when somebody first found out that a stick was better than your fingernail to dig. Machines do things better than humans. Machines have been doing things better than humans but now their doing things better than humans that have to do with thinking. Machine substitute for humans doing those things so there's always losers. People who used to do that simpler thing that a machine can do better but all through human history there has been this moment where humans have figured out a way to achieve this Human-Machine complementarity to do one of several things, vastly increase productivity, vastly increase quality, vastly increase democratic access. Two percent of our population produces all of our food now just fine. Forty percent produced it a couple hundred years ago.

To me one of the really profound questions which is about my re bundling left and right is what is educations version of the human-machine complementarity? What's our version of this significant democratic increase in productivity that will result from AI? That to me is a profound question. You don't have to answer it this week. As we think about that quadrant it's not just about getting people jobs, it's not just about widening access though it's about those things. To me this is the most important question we need to be thinking about in the most abstract way, because machines aren't going to get better at being human machines are going to get better at being machines, and as machines get better at being machines how are we helping humans get better at being human and what would that mean for that to be higher educations project to help humans get better at being human. I think that's slightly different than just trying to make people better people, I think we hope that when people leave our institutions they are better people than when they came in at some level. I don't think that's the same thing as learning how to be better at being human.

So I think that's what this axis is about it has something to do with helping humans be better at being human. I'll come back to this slide a couple times more. Well what do we hope is at the other end of that like what does this moment in history demand? Is it that we really and this is kind of like your comment, it's not just to prepare people for jobs but to make people agents of positive change, is it to create a nation of innovators, is it to create a nation of compassionate listeners and agile doers, is it to better prepare our students to address the existential threats. Climate change, polarization, social inequality. What's at the other end of that axis.

So what matters in this quadrant? Let me throw out a few terms and then tell a story and then stop for questions.

So active learning matters to just use a phrase. Some of you may be familiar with or may be reading this week the well circulated article by Freeman at all on active learning, came out a couple years ago. The punchline is in the title active learning increases student performance, they did a meta analysis of two hundred and twenty five studies and by active learning they are talking about flipped classrooms and other kinds of participatory things which you're diving into this week, but at the end of the article they say "If the experiments analyzed here had been conducted as randomized controlled trials of medical interventions they may have been stopped for benefit meaning that enrolling patients in the controlled condition might be discontinued because the treatment being tested was clearly more beneficial." That's how strong they found the evidence on active learning.

So just based on that, a huge body of evidence behind that. Are we for the first time ever in higher education defining a minimal professional practice? Could we even say using the medical language that Freeman at all used that institutions that aren't supporting their faculty to engage in active learning are not using a treatment that's known to be effective that may be the equivalent of educational malpractice. In any case we have a floor, we never really had a floor before we now have a floor. Now we know, now if there's section of a multi section course with a very low DFW rates and other sections with very high DFW rates is that like a hospital with unnecessarily high post-OP infection rates. We know how to deal with that. So we have a floor at the base of this slope. What's above it? What else matters?

We know the whole person matters and this I think is also getting at that comment. By the whole person I mean things like this, not just knowledge, not just content, not just skill, but dispositions. What I call dispositions or traits. Learning to learn, creativity, curiosity, resilience, humility, ethical judgment, I call these hard skills and that's in contrast to the so called soft skills like chemistry, statistics, econometrics, calculus, things you can learn in classes. I've always found it slightly galling, well first of all if there's ever a phrase that typically precede like the phrase "so called" you know you have a problem but it's always been galling that people refer to things like ethics, like learning how not to cheat another human being as a so called soft skill. I mean learning how to shake hands firmly, I'll go with that as a soft skill but like ethics.

Anyway you cannot teach dispositions, you cannot engage in direct instruction on resilience. I cannot lecture you on resilience except perhaps surviving my lecture but you can create environments in which these things are more likely rather than less likely to be developed and those environments are almost always open ended, unscripted, guided, and mentored. What is often associated in higher ed with high impact practice. That's where these things get developed.

I've always loved John Seely Brown's image of knowledge is an iceberg. In which she talks about the know which is above the waterline and the know how is below the waterline. Kind of content is above, practice is below. He says most of life you need to live below the fat part of the iceberg most college curriculum is designed for above the waterline. Those whole person dispositions that kind of integrative where integration happens is below the waterline.

We also know that in this quadrant relationships matter a lot, a huge amount and we now have data on that not that we needed it but we do. I'm sure many of you are familiar with the work of the Gallup Perdu Poll. They've done this twice now thirty thousand alumni from a huge range of institutions around the country, asked them whether twenty years after college they were flourishing in their lives and engaged in their work and then asked them what was their college experience like.

Basic finding if you had one of these two things, you are seventy-four percent more likely to be flourishing twenty years later in your work than not. That is if you had an adult mentor who cared about you and if you worked on a sustained project of a semester or longer. They found astonishing correlations between those two things or even one of those two things in a huge range of measures. Including whether you are more likely or not to have been recognized by your community as a civic leader is deeply tied to both of those.

Here's the data just broken down a little bit. Sixty-four percent said they had a professor who made me excited about learning. Twenty-seven percent, professor who cared about me. Twenty-two percent, a mentor who encouraged my goals and dreams, but only fourteen percent of the whole data set had all three. Thirty-two percent, Long term project, thirty percent, an internship, twenty percent, extremely involved in extra activities. Only six percent of their data set had all three. So clearly we had disintegrative institutions before we had silicon valley.

Now we also know that deep engagement matters and here I am going to indulge in a story and this is the story that comes out of Georgetown. It's a project that we started three years ago called the Regents Science Scholars in an attempt to do better at retaining first generation low income students in the bio-medical sciences. We were doing a perfectly good job of retaining them in Georgetown but we were hemorrhaging them out of the sciences. So we started this project, has two components, a summer bridge program that's residential five weeks before they enter as first year students. Which is what I'm going to talk about but then we also have implemented, in the kind of act of re bundling these online modules that are non-credit that they take every single summer and now they're taking it even at winter break that are knowledge reinforcers just prior to course work that they are taking in the next semester. Which have also proven to be really effective.

In the three years since we implemented it we have increase our first gen low income students who are majoring in biology and pre-med five times, and that

more than 20% of the matriculating class of Biology majors are first gen low income students, like four years ago that number was two percent. So this story is called the Glen Manor Feral Wine Project and the fact that this story takes place in my life at my favorite winery in Virginia is not a coincidence. So that's the winery that guy is the wine maker Jeff White and that person in the foreground is the professor who also happens to be my wife. It started as all great curricular innovations do at a barrel tasting for case club members. Which we were invited to come to a barrel tasting but in this particular case Jeff White had been experimenting for a decade on substituting what he called feral yeast meaning the yeast of the place for commercial yeast. So he has taken a very scientific approach to this and he had built this barrel tasting around that. So at the barrel tasting I was just enjoying but professor Ulmendorf was thinking I could create a whole curriculum around this, and that happened when was complaining that unlike richer wineries he didn't have the resources to do the kind of soil testing that he'd really need to really understand what was going on at the microbial level.

So Professor Ulmendorf asked him, "Have you ever had your microbio mapped?" Seemed like kind of a personal question but... he said, "No, you have a research team that does that?" Or she goes you have the facilities that do that? She goes yeah in a week I'm going to have thirty students that can do that, and she was referring to the incoming class of the first gen low income students entering into this five week summer bridge. Whose intention is to give them a longer on ramp into college. That's the vineyard, the soil maps overlay ed. Gonna play a two minute clip. Talking about the experiment, let's see if the audio works.

Professor Ulmen: Um but he's we started talking and he said "You have a lab that does this?" And I said, "Yeah, going to have about thirty students this summer working with me." So helping Jeff identify the community of Microbes that were both shaping the plant growth, so the grape growth itself, and so the fermentation process became the research project and so everything else this summer happened in the sense and service of that research project. So that was the work that we did most of the days in the lab and the content what we talked about we just kept pivoting back to talk about why you need to talk about basic ecosystem biology and population and community structures. That's something we would talk about anyway but we talked about it in service of his project. We talk always about diversity of life but diversity of life is actually largely the diversity of microbes because microbes are most of life forms on earth. So we did it in that service. We always talk about cellular energy processes but that's what fermentation is for a cell that's how it gets energy and so everything kind of dialed back to that.

The work that we did in the lab was we went out and we collected sixteen samples from his vineyard and analyzed the microbiome communities that were within those samples. Exactly the project that we did, we had the students design their first weekend class. They were surprised at being handed that responsibility. A little dismayed that we needed to agree but that's how

teamwork works. You have to agree on stuff. So we spent many hours that first week debating it. The phrase what would best help Jeff, What would Jeff want us to do? Became catchphrases and I think one of the things that was captivating about the project was how quickly the students embraced, were enthusiastic about this idea that it mattered. That they weren't just doing hands on stuff but that their data would matter to somebody. So everything happened and like well I don't know how should we plate these Petri dishes, I don't know what would help Jeff. How do we parse the data in the end when we were all said and done. Well I don't know what form would it help Jeff most to see it in. It kind of became the driving logic.

Randy:

So just to quickly reinforce those two key points. One, no sacrifice of content just shaping the content around the project and the power of having a Jeff.

Here's an email from one of the students during the week when they were debating how to design the experiment.

Good Morning I have been thinking about the design of the lab all night. And I think I have an understanding now after reading the material all over again. My suggestion is to create a experiment with like 20 control groups. Greatest sentence ever. Does this seem possible? Can this lead me to understanding its flavor profile, giving Jeff the best possible taste?

Christ these are like seventeen and eighteen year olds, apparently they were reading some scientific articles about these viticultural analysis processes and they said write any technical terms on the board you don't understand and the first word that went up was Merlot. Can any of us understand Merlot? Apparently a fierce argument over how to pronounce Terroir. Anyway that was their design, they figured out based on soil types, slope, location, flavor type, grape type, everything. So they made those decisions which rose etc. They sent the professor out with marching orders to collect samples from those rows. That was completely their design. So we went out collected the samples from every row on the surface and then a foot down. Then they went back and worked on them in lab for four weeks while they learned all the biology and chemistry content and were tested and did all the things that summer bridge programs are supposed to do to get people ready to succeed. As an english professor I am hoping that this slide needs no explanation. Someone out there knows exactly what's on those slide I'm guessing. Part of it some of these procedures are apparently pretty cutting edge.

Then we took them out to the vineyard and part of what's really extraordinary about like part of what's going on in that lower left hand corner is the students immediately wanted to find their dirt. They were like oh my god that's row twelve, I've been working on row twelve. Those students are literally taking selfies of themselves with their dirt, but they own that dirt. I mean it was really moving. Then we went down on the crush pad and in seven different teams in an arc, they described their process. Just to reinforce these are students from under resourced high schools who already think they're imposters, that the

admissions office made a mistake. That they don't belong at Georgetown who are coming to an on-ramp program because they need that extra on-ramp to succeed and before they have been formally matriculated. They're standing there.

I'm just going to play like a minute the audio is terrible but it is subtitles just to give you a flavor.

Ian: In theory inoculate, these plants which means bad bacteria, a specific bacterium that effects stress and creates the best tasting grapes.

Speaker 9: We looked at how the growth of the plant can also effect the fermentation process and that's because the microbes that are found inside the plant or on the skin in the plant and the interaction between those microbes can sometimes be beneficial or sometimes harmful to the plant and that like Ian says goes into the fermentation process and can effect the product. But the big takeaway is that although we know the sequence of DNA we can't get a perfect answer because DNA gives you all the possibilities and all the potential of these microbes but not the specific type. What we would need to know is from the molecule proteins and the proteins can tell us its specific function but at the end what we hope to find is that using this DNA sequence the cultures and PCR will get a better understanding how these microbes possibly work.

Randy: That was no hut. That was the like twenty control groups person. That's Jeff turning to these students and saying what's next and actually sixteen of thirty continued to do undergraduate research in the lab to keep working on this project.

So maybe that's the most important thing in that quadrant is whether students think it matters. Lest you think that it has to be science or expensive or that you have to take people out to vineyards. I can point to many examples of this kind of project based learning that don't have to involve that kind of work or it could even be virtual I was co teaching a class many years ago. Co-teaching with a philosopher, a first year writing class on bioethics and writing that people were getting both gen ed credit for. Gosh this feels so many national catastrophes ago but if you remember the whole controversy over whether the affordable care act faith based institutions had to cover contraception. It was a big deal at the time and Georgetown being a catholic institution was kind of caught in the crosshair of it. We had students testifying on capital hill over being vilified and stuff so it was big deal. So we basically rewrote the class and decided the world needs a model of what responsible discourse on this complicated topic looks like it fit in to what we were teaching in this bioethics class.

So the students worked for nine weeks creating this public website called contraception and conscience. There was no real Jeff but for the students this imaginary reader that they were trying to help understand what responsible discourse looked like became their Jeff. It was just the power of having an authentic audience. There's many other examples of this in the humanities, the

making history public course at Boston College for example, or even out of a core curriculum project at Georgetown that we've been running. A historian has started this thing called tipping points climate project, in which students finished the course by taking a place, usually somewhere they're from. This one happens to be from right outside Portland just pure coincidence that I put that on this slide. In which they analyze the scientific evidence of what's going to be a tipping point for that locale based on global warming.

Book that just came out, president of north eastern, called ROBOT PROOF. High Education and the Age of Artificial Intelligence, Joseph Allan. He says, "We have seen that when learners put their knowledge into practice in real-life situations they develop a better understanding of themselves, their strengths and weaknesses, and their drives and possibilities. They also sharpen their cognitive capacities, leading to the robot-proof qualities of creativity and mental flexibility - both aspects of far transfer." Meaning the ability to transfer learning to unlike situations. "By contrast, no computer has yet displayed creativity, entrepreneurialism, or cultural agility. And although machines are continually improving in their ability to map knowledge onto recognizable problems-in other words, improving in their near transfer abilities- they cannot preform far transfer well, at least no tin the infinite contexts of real life."

So I think we all believe that's what higher education is for but what does it mean for every class to think about that we are preparing students for far transfer but not near transfer because machines can do near transfer really well. His thesis, of course he is north eastern, is that experiential learning, project based learning is what will make students robot-proof and only that. I'm not sure if that's all but...

Famous William Gibson quote. Now there's some interesting examples of whole schools that have retooled themselves or been invented from scratch, like University of Minnesota Rochester. Which is the innovative branch campus at University of Minnesota. Very diverse populations, every student does undergraduate research every student engages in high impact practices. I mentioned Station One that Kristine Ortiz the former Dean of Engineering at MIT, they just opened their doors this summer. Built on the principles of inquiry, inclusion, and impact, social impact. Last week I was at Worcester Polytechnic Institute where they host a project-based learning summer institute. There are teams of people from twenty-eight different schools across the country, all thinking about retooling part of their curriculum around project based learning.

These are the things that matter in this quadrant. It starts with active learning but it's active learning, whole person, deep relationships, deep engagement, and doing work that matters. I think those are the things that it means to be operating in this quadrant. Thinking about both ends of those axes. But in the service of helping students be better at being humans to survive a world in which machines will be much better at being machines. So this is not just to do our jobs a little better, it's not just to help people to get jobs, it's not just to help

people raise literacy rate or numeracy rates. It's about the survival of humanity. Not to put any pressure on you this week.

So we have a floor what's driving us beyond that floor? The floor is active learning. I think the slope is high impact and project based learning and all of its rich integrative, full human dispositional qualities. Yeah that's Ty from a terrible high school in Hampton Roads, Virginia. Presenting her scientific process to one of the best wine makers in Virginia. You know three weeks before she matriculates into Georgetown. So at the risk of sounding like a Capital One commercial. What's in your quadrant? Thank you.

So we have a bunch of time for questions. Yes that is correct. Okay. Oh is that also a working mic? Fantastic.

Speaker 10:

So, it occurs to me that if we want to try to help people be better at being human the students would also have to want that. I say that a little flippantly but nonetheless a lot of the integrative opportunities that we offer here at the University of Oregon, residential, academic residential communities and such are sort of on an opt-in basis and a lot people opt-out. We've been talking a lot this week about sort of what happens when you have a difference in academic goal between the student and the professor and how to reconcile that. So what do we do about this? I mean are students on board with the transformation you are proposing?

Randy:

I assume everybody heard?

So I'm also interested in other peoples response to that. I think that, that's a very complicated question ultimately. To what extent students are on board with what and so I don't say this glibly but my experience and it's not just at Georgetown. I go to institutions of all kinds all the time and have been part of many national projects with all kinds of institutions.

Scaffolded correctly and valued by the faculty and done in a way that looks to be the core of what's happening students especially this generation of students craves relevance and totally feeds on wanting to do stuff that matters. At every level, community colleges, research institutions. It has to be done in a way that doesn't feel like it's punishing them because their working three jobs and have complicated lives. It has to be done in a way that it's not just extra. No the content and the test that's the important stuff and I'm offering you these really cool project based things why aren't you also doing them? I mean it has to be integrated, it has to be valued. It has to be scaffolded but students, I think want relevance out of their education and I think there's a lot of ways. I have many slides I can jump to and I can show in the workshop. We have a lot of data that employers are looking for. They are looking for the kinds of skills that often come out of project based things. These are not remote things, these are life skills. They're career skills plus they're deeply integrative human skills.

I don't know that I would completely agree on the surface but I'm not here and I don't know your students, that students would resist this. I think it's the context in which it's being offered. We also know that there's a huge amount of research on what motivates students and we know that what motivates students. And we know that what motivates them is really three things, does this matter, am I able to do it, and will I be supported in doing it, and if you're designing for those three things. That it's valued. That they can achieve it. That it's developmentally adjusted and proximal and that they'll be supported then I think that most students would actually come alive in this context.

Speaker 10: I just wanted to add a little context to the question because actually, and Kevin can correct me if he's in the room, the constraint on student participation and arcs is not student desire, it's actually faculty. Not having the faculty to lead the arcs. We have more demand than we can supply right now. Much what you said about the student piece I think would apply to the faculty piece as well. How do we get faculty engaged?

Randy: Yes and it also similarly supported in not being extra and not coming out of the other hundred percent of their time. Arcs I assume is like undergraduate research?

Speaker 11: [inaudible 00:59:38]

Randy: Oh okay I see. Everyone in the room knew that except me so.

Speaker 12: I think it's important to come back to the student perspective and what they're expecting from education. They have been frequently let down by public education so by the time they get to college they are looking for ways to get done what they think the teacher wants them to do. Wait for the test, and that's their habit. So offering these extra projects seems just like more work and they're not habituated to these kinds of experiences if we actually integrated these across courses and made that our primary goal it wouldn't be just some extra work, more work somewhere else. It would be what the educational experience becomes.

Randy: Yeah right and at base the most, I don't know if it's a cynical answer, but the most cynical answer is you're already making them do a bunch of stuff they don't want to do so make them do better stuff. So that would be the baseline but motivate them to want to do it. Again I think, and I've seen this all through my career where especially when discussion boards were first introduced and learning management systems and things like that and I'd be doing scads of workshops in the late 90s and early 2000s. Was like I can't get my students to participate but then it turns out there's no sense in which it's valued, there's no sense in which it's integral. There's no sense in which the faculty member has somehow paid attention to that space. They are just sort of bolting it on to everything that was happening before. So Project based work will so not work if that's what you are doing. I'm not saying that that kind of intense project based

the only way to do it and the workshop, I'm going to show some examples and kind of take it in pieces but if it's valued and integrated.

I think that we just have to take a whole institution approach to helping students understand that you will not have a successful career if you are not prepared in a way that allows you to survive the existential things that are going to happen to you. If we don't reframe our entire approach to educating our students around what we think is going to reshape their lives over the next two or three decades then we're actually not serving them as well as we should be. It's not universities' natures to look forward. On our own practices. Almost every, you know, half the disciplines spend all their time thinking forward. As John Seely Brown has said, "Universities are really good at looking in the rear view mirror when it comes to looking at their own practices." But I think if we were looking forward then we have to be committed to saying, "This is the world you're going to live in we're doing everything we can to prepare you to thrive in that world for the next forty, fifty years" Not only are they going to be peaking in the 2040s or whenever people peak, and is a world reshaped by artificial intelligence but depending on how you look at the numbers.

This generation, meaning the generation that's twenty years old now, is the first in human history that has a 50% or better chance of living to one hundred in the west. It has actually declined in the US due to obesity and opioids but in the western developed world where you have a better than 50% chance of living to one hundred. So we're also preparing people for careers that are far longer and lives that are going to be longer than any generation in human history.

Behind you there is a microphone. It's a miraculous world whereas soon as you raise your hand things show up.

Speaker 13: I have two questions should I ask them both at the same time or one after the other?

Randy: I can't answer that until I hear them both so I guess A.

Speaker 13: So question number one, speaking of integration, how do you integrate the faculty who cares about all of these things but the administrators who need to worry about numbers for their own good reasons? That's question number one and number two is, What can be some of the preconceived notions, internal blocks, that we may encounter in this growth trajectory and how can we tackle them?

Randy: So I think the answer to the first one and again it's very contextual like I don't know what numbers administrators are worried about here that are in conflict with the things we are talking about so I'd have to know more about that. So I'm just guessing but I assume some of those numbers are about retention and persistence and graduation rates so we have amazing amounts of great evidence all across the country.

Out of the Gardner Institute, out of the University of Innovation Alliance, that all of these approaches support those numbers. In fact the schools in the University of Innovation Alliance, have found that they have recouped and more all of the investments that they've made on analytics programs, on retraining faculty, on redesigning courses, on investing in peer support and coaching. They have more than recouped that based on persistence, retention and graduation rates and not losing people. So I think that there's a lot of places where those numbers are compatible. I think where one of the challenges can be found is if one of the numbers is how many students you're teaching every semester, and it's definitely more challenging to do certain kinds of project based learning with ginormous classes than with small classes so that can be a tension that one has to work around. But there are examples of project based work at scale. The other thing that I think that to me is a different part of what re bundling should mean, this is not on you as an individuals but it's on the institution, is in what ways can you imagine creating different kinds of re bundled courses at the lower level in order to free up resources to do meaningful project based learning in the upper division.

I go to very few campuses, I go to lots of campuses that are worried about restructuring their intro level classes to lower DFW, I've hardly ever been to a campus that's thinking, how do we do that and how do we actually create more resources or say that part of our plan is that were going to do this at the lower division so we can ensure that every student has this kind of experience before they leave. And again I just think that we have a floor and our expectations are raising we now know how much it matters for someone to do sustained project based work. I think we should get to the point where we all insist that an institution that isn't supporting that every student can do a sustained project of a semester or longer is actually failing at that data point. We have data that that makes a huge difference and if that's not part of what were trying to give every student then were actually not giving them a treatment that we know works. So that's all that's kind of apart of the obstacles question a long the way.

I think that other thing, actually I... That's with the obstacles. Godspeed. It's going to be terrible good luck. No I was actually trying to get to this slide.

Here's sort of five very high level things that I think are part of this design. Like we could dive into each of them. That I think is part of the design. One is going back to the silos and fiefdoms. I don't think we can actually deliver an integrative education to our students if were not trying to be an integrative institution. So we have to connect things that are typically disconnected, first year experience and advising, student affairs, academic affairs, community based learning with academic departments, etc. There's a lot of things that are disconnected that need to be connected. They don't need to be centralized necessarily but they need to be connected.

I think we probably need to think differently about how we think of the instructional net, the instructional staff. It's very hard for individual faculty to take on meaningful project based learning curriculum all by themselves. I've also

found that in the work I do at Georgetown there's this amazing community of people at the university that work in deans offices, who work in the co curricular unit, who work for campus, who are dying to be part of rich instructional designs.

Accept that curriculum design is a team sport. So supporting team based course design. Whatever data, numbers, analytics are being gathered on students and someone is gathering something on students it should empower everyone. It should empower students to read their own data not just well intentioned advisors watching people and seeing who is at risk. It should empower faculty to make design decisions. And then see if we can start to design and measure for the greater purposes of higher education. What do we consider the additional numbers that are tied to integrative learning? What would be measures of success at integrative learning? I think data and sharing data and being transparent with data is one of the most powerful ways to engage the entire community into thinking about this work. Anyway those are just five facile design principles but if you follow them, you follow my program closely you will.

Speaker 14: I appreciate your guidelines but I have a question for larger classes. You mentioned you have worked with larger classes, what tips or what strategies can be used for project based learning? Like a class of two hundred, five hundred or even a hundred?

Randy: So I think for project based learning in large enrollment classes at that kind of scale. First of all I think technology is your friend there that one needs to make use of, social learning environments and other kinds of ways that one can leverage technology, but I think that one can still be giving people authentic tasks. I think you can have people engaging outside audiences. I think figuring out how to scale support possibly older students, possibly teams, possibly undergraduate TAs. But not having to feel like the faculty member is doing all the mentoring. You have to figure out how to scales some of the mentoring. That that then can scale infinitely but you need to do that and to put people into teams, to problem solve how their going to share labor. I think students are extremely good at figuring out how to share labor and tasks. I think also making use of technology to have students, well it doesn't even have to be technology, in larger classes I think students will more likely come to think of their peers as an authentic audience. We'll talk about that a little bit more in the workshop, but how do you leverage the size of the class? How do you leverage connecting to outside experts etc. Those are some of the things that I think one can do.

Speaker 15: My question I don't know if this is going to be for this forum a little bit too much into the weeds maybe it's a workshop question but, I'm all about project based learning come from professional school, making it relevant, doing that quote real world unquote stuff is fantastic. I mean in the examples you showed are just incredibly powerful. I've had those powerful moments with students but there is a flip side to it that I found. Is when you raise the stakes with this kind of project based learning and you raise it to where you make it more and more public and the stakes come up, you lose students who don't want to put

themselves out there and so how do you get those students to go along with it too?

Randy:

I think there's all kinds of ways to be semi-public that doesn't have to be public and I think that we should be worried about that for our students. That its clear that our digital record follows us for our entire lives in ways that you might regret later. So I think it's really important to provide those forums. I think it's also an opportunity to have lots of discussions about what quality looks like and what goes outside the curtain. I think that it's really about asking if there's a certain amount of project based work you want people to do ultimately, how do you backwardly design to ask what are all the constituent activities that would keep empowering people. So it might be having students just practice at smaller level kinds of things. Having students create things for other people in the class. Having people create for other sections, across sections, so that their public outside of this sphere but they're not public in some trackable way. But also having these discussions about what's public and what's not. I'm sure you guys all have drafts of your articles that you don't want anybody to see. So you don't send them out yet. You don't publish them yet. Some stuff isn't ready to be public but we often don't really talk about that with our students. So I think that project based learning can also be a really important venue to have conversations about what quality work looks like.

I think we need to think of project based learning not as a single thing and everyone should do it or not do it but that it is an entire realm of activity the way that critical thinking and writing is an entire realm of activity with many constituent activities and many levels of intensity and many subsidiary skills.

Speaker 1:

Thank you so much.