Bonni: [00:00:00] Educational technology that is designed with a brain in mind can be a catalyst in facilitating learning. On today's episode Dr. Michelle Miller draws from her research in neuroscience and cognitive psychology and helps us teach more effectively using technology.

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Bonni: [00:00:29] Welcome to this episode of Teaching in Higher Ed. This is the space. Where we explore the art and science of being more effective at facilitating learning. We also share ways to increase our personal productivity approaches so we can have more peace in our lives and be even more present for our students.

Bonni: [00:00:54] I'm so happy today to be welcoming Dr. Michelle Miller to the show. She is has an extensive area of research which we'll be talking about today. But more recently as the author of mines online teaching effectively with technology. Michelle, welcome to the show.

Michelle: [00:01:12] Hi thanks for having me on today.

Bonni: [00:01:14] Well I have to tell you I mentioned to you before we press the record button that one of our former guests Dr. James Lang had recommended your book on Twitter.

Bonni: [00:01:23] And I went over and I read this description. I want to read it to the listeners real quick: For the Internet generation educational technology designed with the brain in mind offers a natural pathway to the pleasures and rewards of deep learning drawing on neuroscience and cognitive psychology.

Dr. Michelle Miller shows how attention memory critical thinking and analytical reasoning can be enhanced through technology aided approaches.

Bonni: [00:01:50] And I instantly went click to buy one click to buy all that and I am just so thrilled that you have agreed to join me to expose even more people to your work. Tell me how did you get interested in writing a book about this I know it somewhat connects with your research but was also somewhat a new path.

Michelle: [00:02:07] Wow. So you know from my earliest time in graduate school and really going back to an undergraduate my my first academic Love was cognitive psychology so that's the area of psychology that deals with kind of thinking and reasoning side of human behavior and thought processes.

Michelle: [00:02:28] And it also crosses over fairly heavily especially these days into the neurosciences. So I was fascinated with questions about you know how do we use our memory resources to process information and the deeper you get into this.

Michelle: [00:02:42] The more you realize that it's just astonishing that we can even follow a sentence you know access all the information put it together in memory and compose response. All that goes into that.

Michelle: [00:02:53] And so I come to this with excitement an abiding love for the study of human cognition and thought processes over the years as I came to my current institution Northern Arizona University Of course like with many faculty members we start to marry that with teaching so teaching becomes not a hypothetical but a reality.

Michelle: [00:03:12] Ever since I began studying cognitive psychology we would say we'd look in the textbooks and we'd look at the research and say wow there's all this material here that will help us learn better when you're a student and then how to teach better.

Michelle: [00:03:26] I mean there are real decisions that we make in how to present information how to set up learning activities what to do and not to do. And the study of cognition can oftentimes help you know help us make that decision when we come to this crossroads as I think deeper and you know became more committed to my life as a teaching oriented faculty member.

Michelle: [00:03:47] I started getting more interested in you know how do we take from this theoretical stuff and really make it a reality. You know not just of my own teaching but also flowing out to other other teachers in the profession.

Michelle: [00:03:59] It really began to strike me as well just how difficult this can be because I think you know as an insider in cognitive psychology you've got to look at and say oh here's what the research says well I'll put this in a journal now everybody will know what to do.

Michelle: [00:04:14] Doesn't it happen that way.

Bonni: [00:04:15] It doesn't work that way?

Michelle: [00:04:17] It does not work that way astonishingly enough.

Michelle: [00:04:19] That tends to stay in the libraries as it began for example to work with my graduate students when I started teaching teaching practicum course. I started putting together for them these little informal written pieces that would say let me break down the research for you. Here's what you may have heard.

Michelle: [00:04:35] Here's a grain of truth here's where it's a total mess. Human cognition. What does is actually tell us something you know things that we can concretely do in our classes. And I loved balancing those ideas off my students.

Michelle: [00:04:48] I finally got the courage to start formally putting those out there for other professors to read. Back in 2011 I published a piece in The Journal college teaching about just what memory researchers and catching people up to some recent developments in memory research and I got more interest in that article and felt like I did more good for my profession than a lot of other things that I'd worked on.

Michelle: [00:05:11] So I started to pursue that the opportunity to put this book together came up we decided to even amplify the technology focus because of course in teaching these days how do you talk about it without talking about technology. And that's where the book came from.

Bonni: [00:05:24] There is such this debate about all the potential evils and downsides to the technology. And so what I think it's helpful to start out with what does effective teaching mean to you. What what does that term even

mean to you before you even get into OK. Does technology enhance or hinder learning.

Michelle: [00:05:43] Yes it's a great question and it's it's one that you know we should probably ask ourselves every day we turn to that computer. We are answering the e-mail we should ask yourself this question.

Michelle: [00:05:53] My answer I guess really filters through that disciplinary training. Again as a cognitive neuroscientist in cognitive psychology. So when I think I think learning I think becoming an expert in a discipline that journey from novice to expert is something that we see a lot of people talking more and more about today.

Michelle: [00:06:11] I really do think of building a knowledge base in the mind and in the brain about one's area of study and that means of course not just the big oil index file of facts which is after all not how human memory works but that rich interconnected sometimes very messy network of all the things we we know and all the things we've heard.

Michelle: [00:06:35] And all the things that we believe about are given area of study and it also means of course the thinking side as well. It means having the skills not just of knowledge but the skills that we can sit down and do.

Michelle: [00:06:48] Can I actually not just you know read a lot of facts about how to say set up an experiment but can I actually go into a lab and effectively do that. Do I have enough of a conceptual grasp to do it in different ways in different environments.

Michelle: [00:07:01] So it means practicing and mastering and extending those skills and that means having a conceptual grasp of the underlying principles so do I you know not just able to go in and run that test on my data or crunch the numbers but do I know what it's doing to have that as well I guess you know running through this as well is is that motivation.

Michelle: [00:07:24] So you know while I come to this from the cognitive side I think we increasingly realise that you can't separate you know motivation emotion and cognition. We used to think of them like oil and water they don't mix them on and they don't mix but really these two things in the human mind really complement one another.

Michelle: [00:07:42] So when we talk about teaching and learning. You have to talk about you know why the students are there. You have to talk about developing their commitment to what they're doing and that intrinsic motivation which we're all after in the classroom. Those are the things that come to the top of my mind when I think about what's effective with teaching.

Bonni: [00:07:59] It's so fun to hear you talk about what your professional lens on it. So when we add technology into the picture Yeah what does using technology to teach effectively look like to you.

Michelle: [00:08:12] Right. So and I'm going to do something you shouldn't do it I'm going to take a negative twist on that question first. I think that you know I'm not the first to point this out but it has to be said what not to do is to take the gadget driven approach. We all know we shouldn't do it.

Michelle: [00:08:27] And you know it's it's very easy trap to fall into. So by gadget driven approach I mean you know oh I just picked up a flyer at the vendor booths about this new widget that does this thing you know here's a drop into BB learn a blackboard learn or here's this tool that my that my school just purchased and there want to see people using it every now and again.

Michelle: [00:08:50] Experimenting with a gadget can give us some ideas. It's true but that is not the way to come in you know not to come and just say well I want to do blended learning you know where we're going to you know or flip the classroom. So let's run around and figure out how to put some things online and then bring the students that it has to be goal driven.

Michelle: [00:09:11] So when I think effectively using technology I mean I think of starting with those same principles and working backwards from there. I want my students to be able to do when they leave this class that they couldn't do before.

Michelle: [00:09:25] How should this course change them. What mental activities are they going to need to engage in in order for that to happen. And then I then I find a tool to do that.

Michelle: [00:09:35] There are a lot of different avenues but some of our greatest hits has applied. Psychologists are things like repeated testing having students effort fully recall the knowledge that we need them to master. That's really good.

Michelle: [00:09:49] And you know you can do that without technology but boy is that difficult to do and you can't do things like have an adaptive quizzing system that is going to pick certain questions and not others based on the prior responses it's just not feasible using technology to elicit the kinds of mental activities and the good use of time that we know as experts is going to pay off.

Michelle: [00:10:10] That's what good use of technology means it's not about this tool that system what platform I really just that that's my belief about the technology.

Bonni: [00:10:19] So in this case you're talking about but I believe the phrase is interlaced recall so the recall you described I need to be drawing giving my brain to work to recall the information but also not have it be only from this chapter where we want to be drawn from across multiple things that have been addressed in the class so far.

Bonni: [00:10:38] And so it sounds like you're in that you're not going to rattle off. Here's my three favorite tools that do that but if we were going to evaluate an online tool we'd be looking for it does it allow for that interlaced recall does that allow for the right or in terms of the types of questions that you look for when you're when you're looking at a tool.

Michelle: [00:11:00] Well yes and you know just to kind of reflect on what you just said. I mean you're really talking about the affordances of different technologies any technology you have whether it's a pencil or a learning management system they all you know there's behaviors and ways of interacting with that tool that it encourages and others that it discourages.

Michelle: [00:11:17] So yeah when we look at these tools we should ask things like the interleaved learning and by the way to the interleave learning is such a neat one and that is that is the principle that you should kind of mix up the different topics you know so sort of say I'm gonna teach my students about this statistical test that will be done and move on.

Michelle: [00:11:34] You have to mix it up. The crazy thing about that is just some cells will push back against that because it feels harder or say lies is so confusing you know what is glasses all organs. But we know from a memory standpoint that that really really helps certain kinds of questions.

Michelle: [00:11:51] You know what I've come to call the "big three" of applied memory findings. The big three findings that the testing of fact the interleaving

effect and the spacing effect all those three are really what we call robust means that they're not the kind of precious things that you know oh my gosh you have to set things up exactly right for them to work. They're kind of bomb proof.

Michelle: [00:12:11] There's a good amount of research showing that things like interleaving and having lots of opportunities to to self quiz and practice tests those tend to work even when you've got like multiple choice questions whether or not anybodies favorite.

Michelle: [00:12:25] Even with subtle is that they tend to work. Now if you can manage something like say a short answer question or questions also where students explain why they gave the answer they gave those are advantageous.

Michelle: [00:12:37] But if those are just not practical for whatever reason technological logistical class size. I hope that faculty aren't scared off from trying something like it. You know what I mean?

Bonni: [00:12:48] One of the recommendations you had in your book but forgive me if I don't phrase it right but you'll fix you'll me was where in the learning management system if you have the quiz in there to have it be that short answer or fill in the blank and have it where it auto grades it - if they got it right but if they get it wrong where you could have the chance to go in and evaluate that yourself. And I thought I really appreciated that because it was still creating that learning but at the same time being realistic to the pressures of having so many students in a class and that kind of thing.

Bonni: [00:13:20] So that was that was eye opening for me to go in and think about how I might adapt my quizzes to have there be... I still think like you said the true false multiple choice they can work. But some of these others could be richer.

Bonni: [00:13:33] To solidify that recall but then to also still have that efficiency whereas hey if they answer these five words but then if they answer this I can go in and see well what we're sending them are essentially the same answer. I really like that technique.

Michelle: [00:13:45] Yeah, oh thanks. You know it's interesting in a way we're seeing kind of a shift in mindset. I know my mindset shifted a lot to say you know it's the doing of the question it's the answering of the question that's producing so much of the benefit.

Michelle: [00:14:00] And I think a lot of us especially if we went to grad school awhile ago we're really focused on is this correct and is it correct in every nuance and it's we want to reinforce students for wrong answers and let them you know walk along thinking that it's right.

Michelle: [00:14:14] But you know thinking of these tests as formative learning activities yeah maybe there's you know five different options that they could fill in that - yeah - now I don't have to sweat I don't have to have a discussion with them about this particular question.

Michelle: [00:14:29] Have the computer do what computers are good at which is you know rote sorting and you show me the ones that are really a problem. And in my experience when I've tried this technique a lot of the time you've got a misspelling or you've got something that was fine but I didn't think of you press a button you give them credit. And if not then then you figure out whether you want to give some kind of feedback or not.

Bonni: [00:14:50] Do the computers or does the Internet change our brains?

Michelle: [00:14:56] Oh well I'm going to give you such a weasel answer here the answer is yes. And so does everything else that you remember never using or doing. That's such the problem question for cognitive psychology and it is one where we clearly should be weighing in. Because this is this is on people's minds. You know we laugh about it but it is an important question.

Michelle: [00:15:16] And I think for many people maybe from outside the seal they get know a weird feeling we think this thing is going in my brain and rewiring me and pragmatically for faculty who are going out I'm going I'm as up as great learning activity and I'm going to have this thing and students mobiles will all connect.

Michelle: [00:15:32] And it's in the back of your mind you're thinking oh my kind of advancing something that's negative and bad you know should they be getting technology out of students lives instead. That's that's maybe going to be a real difficulty so I had people ask me that with some sincerity.

Michelle: [00:15:46] You know I get pulled aside at cocktail parties... The internet: We we created it for ourselves and we made it to be to appeal to many of our human instinct and our human wants and desires. It satisfies our curiosity and it

puts us in touch with each other like nothing before and we are a hyper social species.

Michelle: [00:16:05] So that that stuff is like catnip for people you know other people. So of course it does all these incredibly compelling things for us and that's what your brain is evolved to do is to wire itself around compelling important things in your environment.

Michelle: [00:16:20] The catch is that there's really no reason to believe that it does that to any greater degree than say learning to read. I mean that's one that we know actually physically requires parts of your brain together that were never intended to go together.

Michelle: [00:16:34] Yet we don't really feel creeped out by books the way we do by the internet. Something like learning to drive a car or play musical instrument. We know that learning to speak multiple languages requires your brain.

Michelle: [00:16:47] And yet I think we recognize there that it's that it's a positive development not a negative development. That's that's why oftentimes very puzzled take on this this idea that's playing out in the popular culture that the Internet is negative and part of why is the effect on the brain.

Bonni: [00:17:05] You mentioned that we are wired to be social. Yet we hear a lot in the popular media that social networks are making our students actually less social and then they're they're all going out on dates or hanging out with friends and just have a phone in front of them instead of actually making those personal connections our social networks making our students less social?

Michelle: [00:17:28] I think I'd have to punt that particular question to the sociologists not being you know the scholar of exactly how students spend their time I think I have the same informal observations as a lot of other people do.

Michelle: [00:17:40] But I think too though we have to keep in mind that another human quirk is our tendency to really stereotype and put people in that kind of pigeonhole them and we do have to realize that that many students are not enamored with technology.

Michelle: [00:17:55] Some of them are using it. Some of them are grudging users of the of the technology. They may have that phone and they may be poking

away at it because it gets them things that they need to get done in their lives or that they want to get down in their lives.

Michelle: [00:18:06] But if you actually sit down and ask them as they've done with some of my students they say, "You know. I, yeah, these things are a distraction." I've had a few confess to me that their phone was taken away or it broke for a couple of days and actually felt a little bit really.

Michelle: [00:18:19] So I think there's a real spectrum that's going on out there as far as Facebook and it's its cousins in general. There is really interesting research that is developing over the social psychology neighborhood.

Michelle: [00:18:32] So social psychologists have really tackled this this question of how the social networks work. They've they are doing a fantastic job. It is pretty recent. So I think like a lot of things the jury really is still out on what are the further reaching psychological and social impacts of social networking.

Michelle: [00:18:47] But I think some of the findings about social networking that are as important to faculty as you know the wider impact on students socialize is just how powerfully it interacts with our personality characteristics.

Michelle: [00:19:00] So while I don't think the Internet per se rewires as a reprograms us or maybe does all that much to us as a species. Social networking is sort of a thing unto itself. It really tends to amplify certain social interactions and personality characteristics they don't really change.

Michelle: [00:19:18] But you'll find you'd probably find for example that students who were kind of you're more self-centered or classroom dominating and have face to face environment are going to be that way. And the social networking environment.

Michelle: [00:19:31] But because of the massive connectivity , misunderstandings and self-centered behavior really tend to blow up very quickly. But that's I think just the tip of the iceberg of all the neat things that social psychologists are just discovering about social networking per se.

Bonni: [00:19:45] It seems like a lot of the research has contradicted each other and so we're still kind of early about what we're finding now. There's so many hard variables there it's hard to say for them. I've read studies about Facebook makes you happier and then you're depressed and it is like you're saying the amplification of if you were already happy perhaps you'd go out and see

happy things and if you were already tending toward depression I don't know if we'll figure that out.

Michelle: [00:20:10] Yeah.

Bonni: [00:20:11] So you started to allude to this myth. You didn't use the word myth in the book but of course that's how I interpreted it because I have my own biases but the myth of the tech savvy student.

Michelle: [00:20:23] Oh yes. Right. The myth of the tech savvy student and it's one of those funny mess that we all can rattle off all these examples why we shouldn't believe them.

Michelle: [00:20:33] And yet sometimes we still walk around propagating the myth. Props to my fellow social scientists for really taking a lot of social impressions that we have and doing some good research going out and just surveying students about this. And going in, it might seem really obvious. I mean what sort of a dumb study asked whether 18 year olds like technology more than older people? Everybody knows they do. Well guess what? Quite a few of these surveys come out and systematically document that students don't feel comfortable using the technology.

Michelle: [00:21:04] And something that I think is really practical for us to keep in mind which is that students really do differentiate technology. I think it's easy and it perhaps is necessary for us to kind of wealth.

Michelle: [00:21:15] All technology together, you know your Tinder your social Facebook in that the learning management system that you're on and in that textbooks that you're supposed to do. We lump those all together.

Michelle: [00:21:26] But really when it plays out in students lives these are very very different domains. Skills in one don't transfer into another. And what do you know that really also lines up very well with what we learn have learned time and again in Applied Cognitive Science.

Michelle: [00:21:42] Which is that skills and abilities that we think will transfer from one domain just really don't transfer very well at all. So our minds are very contex base to people who can fix their computers can't always fix their cars.

Michelle: [00:21:55] People who can fix their toasters can't always fix a relationship. You know we see this play out in a lot of realms and I think that this

is a case of that the student who is just fantastic at getting into Instagram or managing or figuring out the latest first person shooter you throw him into a learning management system and they don't know what to do and they may just give up.

Michelle: [00:22:17] So I think that's the case. It's segregated and very diverse and when it comes to practical hands on stuff some studies have shown that the middle aged students are nontraditional students actually come out ahead.

Bonni: [00:22:29] And one of the things you talk about I'm not sure you'd categorize under motivation or just laying a foundation but is that importance of why is it we're going to use this tool what's it going to do for us. I like how you're distinguishing this from if it comes to Microsoft Word or Microsoft Excel I can recall very vividly being (I can't remember much about college), but I can remember the spreadsheet made no sense to me. I didn't I don't understand why would you ever want to use something like this. And today I whip out the spreadsheet pretty pretty frequently. So that's that's a that's a helpful thing for us to think about laying the foundation.

Michelle: [00:23:05] Yeah and that's tough because your brain is doing its job. Why on earth would your brain have ever been shaped by natural selection to hang on to the details of something that did not relate in any way to your life or your survival or your goals?

Michelle: [00:23:18] All that stuff does is make it less likely that you'll find the information that you actually need. But then when it's time well we have a context and application to say you know oh my gosh here's here's I need to get my grades in tomorrow.

Michelle: [00:23:32] All of a sudden Yeah I need to know how to plug this formula and it all clicks doesn't it. It just it all falls into place.

Bonni: [00:23:39] Does memory matter in the Internet age. And if it does what should we be aware of when we build online courses.

Michelle: [00:23:47] Well I've got to come down on the side of yes. Yes it really does. And you know I'm not the only person who says this. Yeah we have access to information that is unprecedented.

Michelle: [00:24:02] Yes it's absolutely true that if I need to know what's the denominator in the formula for a test I can just look that up and it is true that we

perhaps need to also be emphasizing how to select from among the many pieces of information that you can find so the quality of searching rather than just ok not having to search in the first place.

Michelle: [00:24:20] Expertise and knowledge just really cannot be fully separated for example to know how to solve a problem within a domain to know you know I've got a crying student in my office has what should I do next. That's appropriate and it will be useful.

Michelle: [00:24:38] That's a professional cognitive skill that I have developed that is just going to tie into some knowledge it's not all about my opinions or my ability to critically think or search for information I need to know a few things and part of that is part of that is speed.

Michelle: [00:24:55] You know if the students in crisis right now. He or she cannot really wait in the hall for 45 minutes while I paged through a nice appropriate readings about student well-being and figure out some phone numbers.

Michelle: [00:25:06] So it's partly simply the practicalities speed. And it's also to see the connections among different pieces of information. So it's still all kind of in the works.

Michelle: [00:25:14] But I'll say it there is there some interesting lines of research that are developing right now more cognitive scientists are showing for example in STEM education that the more that you learn from a knowledge foundational knowledge bases the better you can springboard it up into making things like inferences or drawing conclusions.

Michelle: [00:25:33] It's a case where we're seeing that instead of competing with one another the way many of us learn knowledge and critical thinking and higher thought processes complement one another very very well. We're untangling exactly why and how that happens within the mind and the brain.

Michelle: [00:25:50] But I feel really confident telling faculty that memorizing something is not always a dirty word. Yes. Students have only limited time and effort. No we don't want to just stop with disjointed facts. We need to time all together.

Michelle: [00:26:03] But it is OK to expect your students to know off the top of their head without the Google smartphone. The major things that they need to know and the topics that you're that you're teaching and that that will help

them that will help them become that are consumers of new information that will help them assimilate more information and so forth.

Bonni: [00:26:25] Where does the motivation come in for our students when we're teaching them online.

Michelle: [00:26:30] Glad you asked because this is one where I really felt like I went outside of my comfort zone of reading and writing this book coming to this from the cognitive side and where attention.

Michelle: [00:26:40] And how do we memorize and you know how does how does knowledge complement her thinking the motivation and emotion side is kind of over there. I just realized with online learning you cannot talk about one without the other because this is one big difference.

Michelle: [00:26:56] I think practically speaking with online learning activities versus face to face ones with the face to face courses I think we all develops effective strategies just to survive to get students motivated.

Michelle: [00:27:12] And I mean no disrespect is these are really important skills so I can use my enthusiasm I can use my personal presence I can look at their faces. Figure out you know when are they flagging when are they feeling discourage when are they eating up this information.

Michelle: [00:27:28] I don't have that in an online environment and students don't have that familiar old you know maybe carried over from high school structure of OK here is the class time and if I show up something good will happen online.

Michelle: [00:27:40] You can just not turn the computer on. So procrastination is a huge problem. You know it's not like I'm really missing class which is what students do which is a very glaring example which we all know oh OK something is very wrong here.

Michelle: [00:27:55] I just don't you know just skip the computer and conveniently forget for a few days. Well now I'm really behind and of course online. One thing technology does do is provide just distraction after distraction.

Michelle: [00:28:06] So if I'm not feeling super motivated if I'm feeling put off in any way by that online course it's only going to be that much more tempting for me to click for to Instagram Facebook my shopping or anything like that.

Michelle: [00:28:20] What I tried to do in the book is is it can pick and choose from some of the very best most up to date ideas that behavioral scientists have come up with to say what motivates people. How do you get them moving and to translate that into some online strategies and just as a spoiler. It's not all about the points.

Michelle: [00:28:38] So if you ask faculty why do students - why why would a student turn on their computer when they're tired or want to do something else? Why would they do this and go into your courses? Well they need it for their degree. And it's required and there's pointers like that's not a reason that you need a better reason than that tried to talk about things like of course intrinsic motivation and how you highlight that just even in the wording the ease with students of you know what brings you here or maybe you start off with a letter home a sign that we say instead of lecturing the students saying well here's why you should care about the statistics class.

Michelle: [00:29:11] You say write an e-mail home hypothetically to your relatives and say hey I'm taking this class and here's why I'm excited to do it. And here's why it's important get them to state things like mindset. That's important too.

Michelle: [00:29:22] But most importantly I just I think that any faculty who are going into any kind of online learning need to have a plan just the same way that we now have a plan to have learning outcomes.

Michelle: [00:29:32] You wouldn't walk into the class and say well I don't know what we want to learn. You need to have a plan for how you're going to keep students motivated and discourage procrastination as much as possible.

Bonni: [00:29:43] And part of that too is from what the research I have seen is blending the synchronous and asynchronous. Because when we have that synchronous, it is kind of like going to the gym you're much more likely to go if you've got an appointment with your personal trainer you've got your exercise class that kind of thing because you've got that point in time.

Bonni: [00:30:00] And the same thing with a synchronous. There's a lot of research around this isn't the for profit training in the corporate world but that you'll have a lot higher completion rates if there's a synchronous component to it.

Bonni: [00:30:11] And from the research I've seen it also crosses over into education as well. So that's that's one. One technique has a scheduled time just like a class would be so.

Michelle: [00:30:21] Great point.

Michelle: [00:30:22] We've got to figure these things out as we go along. A lot of the time.

Bonni: [00:30:26] Yeah. So this is the point in the show where we each make a recommendation and as corny as this as I want to make sure and just once again say get Michelle Miller's book I'm going to have a link to it in the show notes.

Bonni: [00:30:37] I mentioned to her before we started recording this show that it was just so difficult for me to try to get this on one interview because it's such a rich book and would be a wonderful tool for faculty to read together and discuss and share how they might benefit from her research.

Bonni: [00:30:52] So thank you and I'm going to recommend quickly a a tool that will let people make fake Facebook pages Speaking of social media. It's a classtools.net. And I will link to it in the show notes.

Bonni: [00:31:04] And I'm teaching a business ethics class in the spring and have been so inspired by people like Michelle and James Lang who we had on the show previously to create some something different than your typical write a paper or do a test and so I'm going to have students make a fake Facebook page around the Enron scandal.

Bonni: [00:31:24] And I think that's going to be a fun tool. I just found out about the tool and put the two together. And as I've shared before and Michelle cautioned us against this I won't be doing too many new adoptions of technology I'll just pick my one thing for the spring and not get too carried away because that's where we start to get overwhelmed with the technology and then it doesn't help us achieve our goals.

Bonni: [00:31:44] So Michelle what do you have to recommend for us today.

Michelle: [00:31:48] Oh gosh it's terrible because I can't pick just one.

Bonni: [00:31:51] Well I picked two so go for it.

Michelle: [00:31:55] I am a huge consumer. I just love the latest New England nonfiction and I just love it. Also when a psychologist. More problems than myself can translate their works into these books that are also great reads.

Michelle: [00:32:11] All with one that is really reason I had a good time with especially if you read the shallows. I think that this book was almost like a counterpoint to it. This is not a psychologist as as a journalist but Clive Thompson's Smarter Than You Think How Technology Is Changing Our Minds for the better. We just not talk much about online learning which I was both relieved and surprised to see.

Michelle: [00:32:33] But you know some really neat stuff about changes on the social level and kind of going on to just the American context and looking worldwide. So that was amazing. I always have to recommend the Invisible Gorilla by Christopher Chabris.

Michelle: [00:32:49] And Dan Simon to brilliantly accomplished visual attention. Researchers who talked about you know what we do and don't see in our everyday lives. I reference that in a time of my teaching about attention.

Michelle: [00:33:02] Anything by James Lang. Of course Cheating Lessons if you haven't seen Cheating Lessons go ahead and run out and get that. I feel about that book the way that you've praised mine. So did want to put that out as well.

Michelle: [00:33:14] And lastly Scarcity is another book by a behavioral economist and a psychologist looking at why we make some dumb decisions that we do in everyday lives in our everyday lives. I broke your rules. I pictured what was at 3 or 4 but hey I tend to believe what Mae West said too much of a good thing is wonderful.

Bonni: [00:33:35] I loved my reading list is going to get even longer but I know that all of those sounds so good I appreciate the recommendations and thank you so much for accepting the invitation to come on teaching in higher ed and just being willing to share your new book with us and all of your expertise.

Michelle: [00:33:51] Oh thank you as well it's been it's been wonderful.

Bonni: [00:33:56] Thanks again for listening to this episode of Teaching in Higher Ed. That was episode 26 by the way which you can reach all the great links at

teachinginhighered.com/26 including the recommendations that Michelle had at the end of the show.

Bonni: [00:34:13] Did you have any feedback on Teaching in Higher Ed? In general I would welcome that. That's at teachinginhighered.com/feedback if you'd like to subscribe to our weekly email. That's at teachinginhighered.com/subscribe. It only comes out once a week and has automatically in your inbox. The podcast notes with all the links included in a weekly article on teaching or productivity. You also receive the ed tech essentials guide when you subscribe. Thanks again for listening and I'll see on the next show.