

# Transcript

[0:01] (music)

**Derek Bruff:** [0:05] This is Leading Lines. I'm Derek Bruff. About ten years ago, I remember reading James Paul Gee's book, *What Video Games Have to Teach Us About Learning and Literacy* and really enjoying his discussion of how some video games are very good at teaching players how to play them. I had been playing Super Mario Galaxy with my daughter at the time and it occurred to me that never once did I need to read the instruction manual. To learn to play, you just started playing. The early levels of the game were structured to teach you what you needed to know to play the game. I remember comparing that experience to my own childhood experience, learning to play Super Mario Brothers on the original Nintendo. Back in the 1980's, you definitely wanted to read the instruction manual before you started playing, if only to learn what the buttons on your controller did to your character on the screen.

[0:58] I think it was this intersection between James Paul Gee's book and Super Mario Galaxy that helped me see just how much learning happens when we play games. And I've been fascinated by this topic ever since, in part because I think there are some lessons for those of us in education about how we might teach. Lessons we can derive from understanding how learning works in the contexts of games. And that's why I was thrilled to hear earlier this fall that Ian Bogost was coming to campus to give a talk. Ian Bogost is the Ivan Allen College distinguished Chair in Media Studies and Professor of Interactive Computing at the Georgia Institute of Technology. He's the author of multiple books, an award-winning game designer and a contributing writer at The Atlantic.

[1:45] I think I first read about his work in *Wired* magazine, which ran a feature on his indie Facebook game, Cow Clicker. This game involved clicking on a graphic of a cow. That's pretty much all there was to the game which Ian designed as a piece of satire, poking some fun at the kinds of games that were happening on Facebook at the time, like Farmville. This game,

however, went viral, which was surprising and interesting and maybe a little disturbing, all at the same time. Ian studies games by making games and I was thrilled to sit down with him while he was on campus to talk about games and learning and technology. Ian is an incredibly deep thinker about an impressively broad array of topics, as you'll hear from our conversation. Here's my talk with Ian Bogost from Georgia Tech. (music)

**Derek:** [2:37] Well, Ian, thanks for being here today on the podcast.

**Ian Bogost:** [2:39] Yeah, thanks for having me.

**Derek:** [2:40] I'm glad you can visit campus for a couple of days. Can you tell us about a time that you realized that you wanted to be an educator?

**Ian:** [2:51] Wow. You know, I think for a lot of professors, we fall into education accidentally as a secondary effect of being interested in a certain kind of work or a certain kind of scholarly pursuit. But I think for me, the experience was about being a student, right? Maybe as early as primary school, but certainly by secondary school, you know, just a sense of really kind of deeply identifying with some of my teachers and not with others. And recognizing, which everyone does this, but you don't really think about it. Recognizing, wow, there are different qualities of educator and different qualities or approaches to managing a course in a classroom. And I remember, so I think that was sort of the moment for me. And I don't know exactly when that might have taken place, but like a sense that there was a design process at work in teaching, which I hadn't thought about before. It seems extremely obvious in retrospect, but like anything, it's not, it's naturalized for you to think about that a classroom kind of works in a certain way.

[4:20] You know, actually like to be a little more specific, I had this, in high school, I had this Latin teacher. My high school still offered Latin and everyone loved him. And they loved him partly because his class was like very informal and he talked about these sort of deep life lessons and he was a sort of a beloved character and confident for a lot of students and all of that sort of, you know, like almost stereotypical, like high school film kind of qualities, right? And there was a moment I remember at one point in his class like late in, I took a couple liters, of Latin, at least. And, and he said something like, "you know, people always tell me, I learn more about life in your class than anywhere else." And he said, "I kind of wish someone would say that they learned Latin." (Derek laughs)

[5:25] And it was funny. It was a funny moment and I remember thinking, well, my dude, like

you should've taught us more Latin actually, you know, which wasn't to say that it was a problem, but rather that there was this sort of moment of realizing, wow, there's this sort of balance between who you are as a person and as a teacher and how you relate to the students and what you're, what you're causing them to learn and what you're helping them be inspired by. And that there's sort of, you know, kind of organism that's throbbing and moving it in the classroom. So I think those are some of the moments that strike me, as being formative in my pursuit of education.

**Derek:** [6:10] Well, I'm going to circle back to your own classroom a little bit, but I want to talk to you a little bit about games. You study games. You make games.

**Ian:** [6:18] Yes, sometimes I do that, indeed, yeah.

**Derek:** [6:22] What have you learned about learning through your study and making games?

**Ian:** [6:26] Sure sure. There is a well-known linguist and literacy scholar named Jim Gee, who has had like several extremely successful careers in different domains. And fifteen, or more years ago, he wrote this book on games and learning, which was called, *What Video Games Have to Teach Us About Learning and Literacy*. And Jim is a great guy. He had this argument which was like the way that a game teaches you to learn to play the game, the way that it's scaffold to your experience is better than almost every other learning context. That it really shows you kind of how to move from one moment to the next to the next and ratch up your experience and ease you on in into a very difficult challenge.

[7:21] And people got very excited about this and it's not the first time, this kind of goes back to the earliest days of the computer, the personal computer and using it for education. But there's a trick, there's a not unspoken fact, and I mean, Gee was extremely direct about it, but no one really noticed, which is that, well, all that it really teaches you is how to play the game, though. And so he would look at these sort of like very difficult, complex action games, like Ninja Gaiden and kind of persuasively show how they were sort of literacy features, how they were teaching the player. But it's completely useless unless what you want to learn is how to play this ninja game.

[8:06] So the transfer, this question of transferring the experience, the structure of a game out of the game or out of the entertainment sphere and into another learning domain has remained essentially an unsolved problem. I would say so as, I have been making games on, a lot of my games are explicitly educational, whether in a K12 or a K16 context or in a

corporate learning context, or what have you, you know, we've always thought about that. That what are we, what are we doing in the game? And what does that have to do with what happens outside of the game? Because it's not magical and you're not guaranteed to have a learning experience, a learning experience at all, let alone a better one, just because it takes place inside of a game that is supposedly interesting or fun to play.

[9:03] So one thing that I've always tried to build into my work, and actually there's a student of Gee's, David Schafer, who's I think still at Madison. I haven't kept up with him lately, but he was also a literacy scholar and did these studies where he showed that, you know, you can, one of the effective things about games is if you kind of take people, he's done this with younger people, you have them kind of talk about a subject and then you engage with the game. And some of them they were designing, some of them were digital games some were non-digital games. And then you talk again about the material that, you know, if you can show a kind of depth of discourse, greater sophistication and discourse, after play, then that might have been a good learning experience.

[9:56] Which means that I don't think this applies just to games either, but you know, in the context that was what he was looking at. So it means that the game is, it's like a book or a lecture, or like any piece of media content that it's part of the process. And then you have to be able to synthesize the material and often talking about it or performing it, but kind of talking through it, whether in an actual classroom environment or that, you know, we've done a lot corporate games at the studio where there's like an intranet or some kind of place where people who are working at an organization can chat and talk, and someplace where you can kind of work through what it is that's going on. That seems to be a necessary.

[10:47] Now, you know, one of the things that I always dreamed was going to be possible through games. It was harder through other means, is like this idea of complexity, like representing the complexity of choices and interactions between all the moving parts in a system or the system is simple or complex. And those aspects, you know, it's kind of native to games. You have, you make some choices here and then it has an impact on an experience over there. And, but getting that across and really getting folks to engage and find and kind of deeply ponder the nature of those kind of complex systems, that turns out to be really, really difficult. Often it gets hidden. The games are often illegible because it's really hard to make games, let alone games that are about something, let alone games that have a goal like teaching. And in some cases it's maybe more like a provocation for them, it's sort of talking or thinking through the subject outside of the game, you know. I think overall, like if you go

back to the early days of edutainment in the early eighties, late seventies, early eighties when the PC, the personal computer, IBM PC was new, that we saw a lot of games that were just these kind of like drill and skill kind of games, like Math Master kind of games.

**Derek:** [12:16] I played that.

**Ian:** [12:17] That's, that's okay. That's okay. There's a scorn toward that sort of learning, but there's some material and for some ages and so forth where that's the right kind of learning, actually, the repetition we get in games. That's also a feature that is worth putting to use. You know, and, and that's okay, you know, it doesn't have to be the sort of big complex concepts and projects. In other cases, what you see in a game is, so I'll give you an example, like I did this game, several versions of this game for Cisco, the networking equipment company, who have these certifications that you have to do to become a Cisco authorized technician. And there are certain kinds of, kind of patterns of binary numbers and their combination that are particularly relevant.

[13:11] And so we had this little sort of drill game, sort of puzzle-like game, about eight-bit binary numbers. And it sounds extremely boring and maybe a little sort of out of left field. But the folks in that community, they really appreciated having that place where they could sort of just remind themselves of these, of these patterns that were necessary to do network configuration. Much more successful than some sort of like, you know, role-playing game about someone has a problem in your office and you have to sort of figure out if it's them or the network or if they're up to no good in their office or what have you, which is the kind of thing you can imagine someone making, you know.

[13:54] But what I was going to say about the repetition is that the, this is another like native feature to games that's harder to do elsewhere that we tolerate repetition in games, for some reason. In fact, we thrive on it. That's kind of what you want. You want Candy Crush to be the same, a little bit different, but the same every day. And that's what draws you. That's what draws you back into it. So I think some of those features are just massive, the under explored, even in my own work, I maybe overshoot things, and then we sort of pulled back. But we, we also had this kind of gamification thing that happened where everyone thought that we could just put these incentives from games into everything.

**Derek:** [14:42] That was actually my next question. I think some of this came from Gee's work, this idea of gamification. And I see it as often a pretty shallow way to take some elements

and apply it to education.

**Ian:** [14:56] It's a shallow way. It's a rhetorical move, mostly, by which I mean, if you think that games are interesting or sexy or that they're going to get people to engage with your learning content. Or that maybe there's a funding opportunity you can impress your boss, or all of the reasons why people do things in a work context. Maybe having a game is more important than the game doing anything or having something game-like or engaging with this sort of dark, mysterious medium that seems to have great power over people. And so, yeah, you borrow like any element from games and the gamification folks have, they really like, like levels and points and rewards and achievements and so on. And for some people, those are incentives that are appealing, often in this kind of partial reinforcement psychology kind of way. And often in a way that lets the organization sponsoring a game like this to sort of manipulate or steer people toward desired and sort of keep tabs on them or all sorts of other things.

[16:04] But nevertheless, it doesn't really matter if they work at some level. I think that the gamification move was less about outcomes and validation. And more about sort of getting lift on a trend at a particular moment in time. And it's kind of fallen away. But at the same time, the places where it's entrenched itself, in terms of having kind of numerical metrics and rewards or incentives attached to them. There has been a decoupling of that kind of aspect of things from games which maybe is good for games because they don't have to be kind of dredged through the murk of corporate manipulation, but also that doesn't, that stuff is still happening. It might be bad that it's happening.

**Derek:** [17:00] Yeah. So what could we pull out of the world of games into education? Your new book is on playing and about fun.

[17:07] Well, yeah, I mean, I've sort of really turned a corner with this in the new moments. It's not that new anymore. But a few years ago, I did this book called *Play Anything*, which was kind of a revisiting of some of my previous work, which is again all about games and rules and procedure and the idea of models and all of that. And I think, I still think there's a lot to be learned from that, but the other aspect of games as play, and play means to me are the way that I sort of think about it in the book is that play is when you manipulate something, when there's something that can be done with an apparatus or a situation. And you sort of figure out what is possible. And that exploration of its possibilities is what we call a play.

[17:56] And then fun, the thing that fun is this bizarre word that no one, people use it without really knowing what it means. If you sort of stop yourself the next time you say, "I had fun," and what do I mean? It's usually just a kind of phatic speech act, where you're just saying everything's okay. It's like how are you and I don't really care how you are, I'm just being polite. And so the same thing is true of fun, often. So, you know, I started thinking about fun in relation to this idea of the kind of the exhaust of play, the thing that is left over when the play experience is gratifying. And so to me, what that suggests is that like when something, when you find something new, when there's sort of a new discovery in the experience of play that tends to be where fun lives.

[18:42] And that novelty doesn't have to be utter novelty. It doesn't have to be something you've never seen before. It can also be like retracing, rediscovering something you already saw. You know, when you're able to hit the baseball in the same way that you did previously. That's fun. That's extremely gratifying. And that's the same kind of idea. So, you know what this means, it doesn't have anything to do with games necessarily. It doesn't have anything do with computers necessarily. But if you think of play as a process of kind of identifying what is it even that I'm working with and what can I do with it? And then how can I sort of treat it with this deep respect, assuming that there's something interesting and useful and appealing to be found inside? And then I'm going to look for it. And out of that exploration comes delight, then that's directly transferable to any walk of life, including education. Because what you're really talking about doing is kind of treating a subject, a situation, a classroom, a topic, whatever it might be with deep earnest respect, not trying to dress it up, really, taking it for what it is. And then inviting, in the case of a classroom, students in to look for and discover the connections to their lives or their interests or, you know, to grasp how particular discovery or realization was made.

[20:11] So the idea is you're laying things bare and kind of being alone with them in the cold and not pretending as though they are highfalutin or overtly complicated, but just that here we are together with this thing. What's it all about? What can we do with it? I think that kind of an attitude, sort of playful attitude in an educational context is really refreshing for everyone because it's not about putting on airs and it's not about, you know, working to the task. It's not about assuming that there's some concrete piece of knowledge that then is the thing that you need to take away or that there's nothing there and you're just sort of there to get your grade or your credential. It's like an invitation to sort of like really a deeply engaged with the thing itself, to play with it.

[21:12] It's serious stuff which is just counterintuitive because you think of play as being this sort of like off the books activity that's unrelated to work. But I don't see it that way. And I also think like there's this opportunity in play to just become really raptured with something, whatever it is. And that's certainly an approach that we want to take in our lives, whether it's in a classroom, in our jobs or whatever, like. What if we could gain deep gratification from everything we do rather than thinking, like I have to do this thing that's boring or stupid? And then when I'm done with that later I can go do something fun. What if everything could be fun like that?

**Derek:** [21:53] So do you see this happening in your own teaching? I want to circle back to courses you teach.

**Ian:** [22:00] Yeah. Definitely, yeah.

**Derek:** [22:04] Do you try to bring this sense of play into your courses?

**Ian:** [22:07] Yeah, and it's not like a cloying thing. It's not like a, this is the playful classroom kind of nonsense. It's really just an attitude that like how can you sort of make the class, the learning environment, be real, and be like honest and where you're just really addressing what the material is inviting the students and the teacher in relation to the students to do and to work on. It's harder to do this in some classes or contexts than others.

[22:40] So I have a game design class that I'm teaching right now, and it's a small class and sort of studio style class. And we have some themes and we're looking at some games and, but we're just kind of running it as a place where we're working on some questions about some specific design questions about how like kind of very, very mass-market mobile games have been and can be successful. And you know, the students, when they enjoy it, I think most of the students appreciate this. They tend to call it, the feedback I hear, they really appreciate how like kind of casual the class is. They'll often say that. And I don't, it's actually not really casual. I don't think, in the sense of, it's demanding, right? But like I'm just there with them, you know, as a kind of peer working on game design problems. In that kind of context I can strongly downplay all of the kind of apparatus, of the course, like I write a great detailed syllabus because you have to, but, you know, but the, all of this sort of like business, of this sort of punitive or structural aspects of getting work done can fall away because it becomes really about the kind of problem space.

[24:01] But that's an easier lift than a big class, like a big. And I have other classes that are



likes this, where there are large classes. And you now, one way to do it, one way to sort of show the students what's possible is just to kind of perform it. Here's a project that we're working on that I teach and sometimes I teach the intro class to our Computational Media degree. And it's complicated and challenging for the students and the faculty teaching it alike. But, you know, there's projects, there's these kind of projects where they're looking at computing system they had ever seen before and making it do something that seems totally arbitrary, doesn't feel like it has any connection to their lives. And so I'll often just kind of walk through it like kind of live, you know here's some examples, but let me sort of show you what you can do.

[24:53] I've also tried in this particular class, many years later, later in their careers as students, in the degree. They'll often kind of go, "Oh, like I get it now. I see how that connected with the experience that I was, it was tough at the time, but now I understand it." And that's an easy thing to connect back actually for the students. You can bring in some of their peers and just kind of show them, you know, here's something that happened or, you know, maybe if I invest twenty minutes like that near the start of the course and I just leave and let them, when they're in the moil of it, when they're in throws of some of the work. Not at the start when they feel like, "This is a terrible mistake or what is this even?" Which isn't about buffing, you know, it's just about like trying to it connect the dots.

[25:44] So I think the whole thing, the whole thing is just about like, just like being kind of deeply curious about what's really happening in the class, not in order that you can like respond to every complaint or need, but with this kind of curiosity of earnest curiosity, what is working, what isn't? And then when you go and you revise it to do it again the next term or when someone else is teaching it, that that's a process too. Wow, I really feel like this assignment isn't working. Why is that? Or students feel this way about this sort of subject matter or this part of the class. What can we do, it's a designedly process of like are they right, are they mistaken? We're not trying to just sort of satisfy the students or confuse them or work them hard. But to sort of really deeply understand where the class is working and where it's not.

**Derek:** [26:43] I think some faculty struggle with attention between the curriculum and specifying particular learning objectives and letting students play and explore and discover. How do you strike that balance?

**Ian:** [26:58] Yeah, I mean, a lot of faculty are sort of extremely cynical or resistant to learning

objectives. And they think there's this sort of like apparatus that's brought on from on high related to new bureaucracies of assessment that are mostly oppressive or like neoliberal or God knows what kind of criticism can be thrown at them. And I get that, you know, like I get the fact that our jobs have become more bureaucratic over the years and irritatingly so and there's not enough support to do all that.

[27:29] But if you sort of step back and ask yourself the question, should students be taking something away from my course? Every educator would say yes, obviously they should be. And so that process of articulating what they ought to take away is a useful way of not of keeping you like honest, but of clarifying what it is you're doing and why. So I, in part, I think the whole rhetoric around learning outcomes has ruined matters and it's just poisoned the well. And I understand why there's this tension between the learning scientists, the assessment organizations, the administrative apparatuses that are managing it, and the classroom teachers themselves. And the students who now sort of have internalized some of this in a way that is sometimes good and sometimes not so good.

[28:25] I do think that all of the technological apparatus we've put in place and kind of the strictures of syllabi, the learning management systems that have become the norm. All of this stuff is making it harder to sort of throw off the weight of these structures, for the students in particular. And working against that is also kind of necessary. I think there does have to be some kind of sense of uncertainty or openness or open space with which, within which you can move in that kind of playful way as a student in order to get to the end. Otherwise, it's just like multiplication tables or something, right?

**Derek:** [29:13] Are there technologies that you'd like to use in your teaching that create some of that open space for students?

**Ian:** [29:19] I mean, it really depends on the context of the class. I really like blackboards, like some people do.

**Derek:** [29:26] Like chalkboards?

**Ian:** [29:17] Yeah, like chalkboards. Whiteboards are better than computer screens, but they're not as good as blackboards.

**Derek:** [29:34] Why is that?

**Ian:** [29:35] Well, part of it is that they just don't work. The technology, the whiteboard technology is not reliable. And I have some kind of, I don't know, bad luck. I don't know what it is. I will like burn through Dry Erase Markers, they just like dry out in my hands. I don't know what happens. And so often I find myself just out of markers then I've got to go and steal one from the next classroom. And that feeling of not really knowing if it's going to work is annoying. But also I don't think they're as visible on the front of the room as chalk is.

**Ian:** [30:09] By the way, just as an aside, I mean, the reason we got rid of chalkboards, in classrooms, is because of computers. We started putting computers in classrooms. And the dust associated with the chalk was damaging to the equipment. So at the same time as the classroom kind of technologized, there was a kind of decommissioning of blackboards in many cases, except in the kind of old-world lecture hall where it's, it's serving a kind of secondary purpose, suggesting a certain sort of August educational space, you know, wood paneling and a nice black blackboard at the front.

[30:55] So I like, I like blackboards. I like to use, so I teach computing a lot, and we are working with computers and I like to use a lot of kind of live demo sort of thing. I really hate PowerPoint, or slides, but I like just opening up a project and sort of starting to hammer on it. And I do the same thing with writing that way too, a lot of live writing or live editing. Anything that lets me perform the work in a way that the students can see and grasp. And then also in some classes I like cloud-based collaboration, file sharing systems. It really has made it a lot easier when you're working on stuff where you want students to see each other's work or work together to just get rid of all of the kind of bad apparatus that made it hard to do that. And you know, now that we have these like site licenses for Dropbox or whatever, the students don't have to pay for space and you know, and they can just put their stuff there and we can all look at it together and not have to not have to go through Canvas or something, in order to do so. I'm not a big fan by the way, of course forums, you know, Piazza and that kind of thing. Basically, anytime you put, anytime you let people talk on the internet, nothing good happens, or it tends toward the bad, right?

**Derek:** [32:25] One can make that argument.

**Ian:** [32:17] And you know, there are contexts in which it's necessary and beneficial. And it's not that I don't use it. It's that overall, I think it's an excuse to either air grievances or to not to pursue answers in more productive ways. I'm generally not a fan of these learning management system, in general, though, unless a class really recommends it. There's contexts

in which you kind of have no choice but to do something like that. But no, I'm pretty low-tech, as far as the class and the teaching experience goes. I think that, you know, it's really more about what, how can the technology facilitate our ability to interchange materials and ideas with rapid, kind of short feedback loops. Those are the kinds of technologies I'm interested in. The blackboard is like that, but the projector is like that when you're using it to sort of show something. And small-scale assignments, it's not a technology but you know, small-scale rapid-fire assignments, that happen frequently rather than sort of large, big projects that don't realize themselves until the end, those kinds of things.

**Derek:** [33:50] I have a question from one of my colleagues here at Vanderbilt. Cliff Anderson is a librarian and one of our fellow Leading Lines producers. Among many things that Cliff does on campus is he teaches Computer Science to non-majors. And he was interested about techniques that you might use to introduce ideas from computer science or computer programming to students who don't necessarily have that kind of background, particularly humanities students.

**Ian:** [34:15] Yeah. So there's a whole field that looks at this question in computing and computer science education, right? Which is a kind of subfield of the learning sciences. And the, the prevailing wisdom in this community is that to introduce people of all kinds, the kind of broadest possible array of potential computation lists to computer science. You want to give them something concrete that they can kind of realize and be interested in right away. And I have a former colleague at Georgia Tech, Mark Guzdial, who developed this media computation approach which uses Python mainly. It was all about sort of manipulating media, images, sound, and that kind of thing because people have a kind of natural interest in media. I have a colleague at Georgia Tech, Brian Magerko, who has this whole project on like kind of hip hop sequencing as a kind of platform for doing early stage programming. And so that's sort of the prevailing wisdom.

**Derek:** [35:24] This is why my middle schoolers do robotics.

**Ian:** [35:26] Robotics and Lego Mindstorms was like this. And you know, there's Scratch, this technology MIT developed where you can make sort of little interactives. This has always been the kind of, well, not always, but since this discovery has been made that maybe we want to teach computer science in a way that people who don't already know it, could get interested in it. And as you can tell, I'm a little unsure about this approach. Not because I think it's bad, but because I think there are risks or side effects associated with it.

[36:00] One of them is that you can learn the basics of computing effectively and quickly this way, but it's quite hard to go deeper. You really eventually do have to learn how these machines work and how to manipulate them at a professional grade. So the risks being a kind of huge chasm between the early-stage intrigue and learning of a particular kind of sandbox system. And then really getting things done, not necessarily professionally, but getting things done in a way that would lead you to choose to solve problems with computers. So it's not always the case. And certainly, Python is a general skill that would be useful to anyone now.

[36:45] But one approach that I'm fond of, although I never really get an opportunity to pursue is, is going back to the way that we used to teach early stage computing, but revising it. And that early way was starting at the basics, the fundamentals of how computing systems work, how logic gates work, and then moving up into how machine code works and constructing a sort of simple system. And these were often like really, really kind of arbitrary, like really basic computer systems that were built for the purposes of teaching these principles to computer scientists. And so they felt extremely disconnected from reality because they were, they were just these kind of learning sandboxes. So instead of doing that, we could go back and do the same kind of work on the history of computing. Because computing systems, we don't have to make up simple computing systems, the history of computing gives them to us. And then we can learn something about where all this stuff came from in the first place

[37:48] I'm very fond of this idea of integrating that, that history, the conceptual material history of computers with learning how they work. So, you know, you go back and you read Turing's, Alan Turing's original paper on the stored program technique and get some fundamental idea of the principles behind the architecture that became central to most computer processors and that's quite useful. And you can build something with that. You can literally build something with that or program and there's simulators for that. And then you can look at simple early-stage microcomputers, for example, which were much more programmable by the every person, when they were first marketed and sold between 1977 and 1984. In particular, you got the Apple II and the Commodore and all sorts of machines that booted up and they asked you to program them in Basic or in or in Assembly. And those processors were simpler.

**Derek:** [38:47] That's how I learned.

**Ian:** [38:48] That's how I learned, yeah.

**Derek:** [38:50] We were getting books aimed at kids.

**Ian:** [38:52] That's exactly right.

**Derek:** [38:53] And there was Basic code in the back. And you'd type it and see what it does.

**Ian:** [38:54] That's right. And then you'd type it and you'd learn how it worked. And so those machines were simpler, the processors were simpler because they were earlier stage. And so you can kind of work your way up through the complexity of the machines and also learn about the arbitrary, but real choices that electrical engineers made in designing the hardware, which are sometimes just completely bananas. I've taught the Atari this way a number of times because I do a lot of work with the Atari, which has no video memory. And so the way that you have to interface with the display is by programming ahead of the electron beam on a scan line by scan line basis.

[39:36] And then, you know, that's just bizarre, but there were millions of titles, millions of copies of game titles shipped on that hardware. So no one's doing this by the way, this is a sort of hypothetical approach to teaching, computing, but to me, grounding and embedding that knowledge in the evolution, the cultural and material evolution of computing. And then you can sort of steer out to its impact and its uses. Just feels much more, much more grounded. And like it was, like we'll stick better than learning to manipulate some images a little bit. And then you're kind of on your own or you have to figure out how to then connect that to something meaningful and real.

[40:19] There's a secondary rationale, I guess I have in mind here, which is that computer science as a discipline, not just in the classroom for undergrads, but all the way through the research community and the professional community as we've kind of seen over the last years is an extremely unhistorical field. It's just not interested in its own history. It's only looking forward and therefore doesn't learn anything from the lessons of the past. And also it doesn't commune with that past as a way of grappling with what was possible and why it turned out the way that it did. So I think you get a lot of bang out of this.

[40:54] And maybe we shouldn't be, maybe we shouldn't be learning programming or computing principles at the basic level. Absent context, it's not how we learn anything else. If you want to learn to be a fine artist, you wouldn't sort of, yeah, you take some color theory

and drawing basically, but you learn in the context of the history of art and same to be true of music and any kind of creative practice is like this. You have to see where it came from and how it evolved.

**Derek:** [41:27] Well Ian, we usually end our interviews with a question, but I think you've already answered it. So I'm going to change our question. We usually ask our guests, since we talk so much about digital educational technology on this podcast, I ask them to identify an analog educational technology that they're fond of. And you mentioned blackboards. I'm a fan of blackboards myself. I'm a mathematician by training and a lot of mathematicians are blackboard fans.

**Ian:** [41:51] That's sort of the native form.

**Derek:** [41:53] So I'm gonna change the question a little bit. You work a lot with digital games of various kinds. Is there an analog game that you think does something interesting in terms of learning or engagement or play?

**Ian:** [42:04] Yeah, the I think that the, I've been doing this in my studio, my game class this term actually, spending a lot of time with cards, with playing cards. The platform, if you want to call it that, of the 52 card deck is really interesting. And it's not just interesting insofar as the card is, there's a lot of interest in prototyping, what's called paper prototyping in game design. So it's a big pain to make computer programs. Maybe we want to plan it out on paper first with some shifts and some cards and some other sorts of tokens that let you sort of think through how a system might work. And it's very common for designers to have like a kit of stuff that includes a bunch of blank cards and they can write stuff on them. So the card gets kind of abstracted from, you know, it's a unit of paper rather than a piece of, you know, like the nine of clubs or something like that.

[43:03] And there's benefit in that too. But it's also worth remembering that we have a long history of playing cards as a format for engaging with ideas and systems and experiences. And that they have all sorts of secrets that haven't been discovered yet. And in fact, maybe there's something good enough about a technology like that, not just analog and simple and well known in its form, but also it's sort of representational capacities are likewise fixed it and still have something interesting to offer, which suggests that we don't necessarily need to reinvent everything all the time. And in fact, there are these deep, deep games in playing card that come out of a playing card deck, Bridge or Poker, or what have you that are intriguing to

people for their kind of bottomlessness.

[44:10] And then, and then even within those systems, there are all sorts of small and large variations of use and of material interaction that can arise from. So if you just kind of take a deck cards and say, well, what are the things that can be done with it? You know, you can shuffle it at the table and kind of mob boss like in a way that demonstrates that you're extremely patient. But also that you're sort of antsy, or you can do magic tricks with it. Or you can just sort of throw the cards about and move them and move them around. Or you can match them like kids would do, or you can bet money against combinations of them. So yeah, I think that's a platform that you notice. It's hard to say that it's overlooked because people definitely play card games. But it's not, it's so little overlooked in my book.

**Derek:** [45:06] But to think of it as a platform.

**Ian:** [45:07] Yeah, as a platform, for sure. And you know, it's actually become a little bit difficult to get a pair of playing, get a deck of playing cards, these days. You have to really, you can't just kind of walk into the drug store and pick up or like walk in the airplane, you used to be able to get a deck of cards on the airplane. And now you can barely get anything in the airplane. (Derek laughs) So all of those contexts are interesting. It's really a delightful memory actually that this dead time of airline flight, before we had screens on the seat in front, you really could, you could read a book, you could read a magazine. You could sit there and the card deck was very much an active way of making use of that time.

**Derek:** [45:50] Well thank you, Ian. This was a really fascinating conversation.

**Ian:** [45:51] Yeah, thanks so much. It was really great to sit down with you. (music)

**Derek:** [45:58] That was Ian Bogost, professor of interactive computing and lots of other things at the Georgia Institute of Technology. I have to say I was a little intimidated to sit down with Ian for this interview. His writing voice, both in The Atlantic and on Twitter, can be a little provocative and sometimes a little snarky. But in person as you heard, he is incredibly nuanced and well, kind. Thanks to Ian for taking the time to talk with me. And thanks to Lynn Ramey, faculty director of the Vanderbilt University Center for Digital Humanities, for bringing Ian to campus back in October.

[46:33] If you'd like to learn more about Ian Bogost and his work, see the show notes for links to his website and Twitter account. It's highly entertaining and informative. There's also a link



to one of my favorite small projects of his called "Put Words Between Buns." It's a website where you can type in some words and generate a graphic of those words between two hamburger buns. It's delightful.

[46:57] You'll find show notes for this and every other episode of Leading Lines on our website, [leadinglinespod.com](http://leadinglinespod.com). We'd love to hear what you think about our conversation with Ian Bogost and how we can approach our teaching in a more playful manner. You can reach us via email at [leadinglinespod@vanderbilt.edu](mailto:leadinglinespod@vanderbilt.edu) or on Twitter @leadinglinespod. And as they say, please rate and review us on iTunes or wherever you get your podcasts. It really does help us find a larger audience. Leading Lines is produced by the Center for Teaching and the Jean and Alexander Heard libraries and the associate provost for education development and technologies. This episode was edited by Rhett McDaniel. Look for new episodes the first and third Monday of each month. I'm your host, Derek Bruff. Thanks for listening. (music)