

Tiffany Grunwald open mike for questions:

QUESTION; Bedside's the technical skills, what cognitive skills are involved in winning a game?

(Zyda)

As you go to build serious games, from the entertainment perspective and on the software side, you've got a lead programmer and the art and programming team from the art side; you've got a lead artist and an art team, and from the design team, you've got a group that puts together the story for the game. So when you get into serious games, you add a fourth team which is I guess you could call the pedagogy team and you probably have some human performance engineers that are subject matter experts that are working very closely with the guys who know how to build a story and push that forward. And the pedagogy has to be subservient to story. You first have to have the compelling story and then you can insert some pedagogy into it. We are in fact, looking at that as a huge part of our serious games agenda.

(Noah)

One of the things that I find that games can bring into the whole teaching world is the ability to convey some of the intuitive and subconscious learning that is so important in becoming an expert at anything, and just to take a simple case and point out, I worked on some flight simulators in my career, and flight simulators are one of those cases where the computer can actually do a really good job of mapping what you see on the screen to what you would see in real life. Something that actually becomes quite difficult when you actually get into representing human beings and it is possible for example on a flight simulator for someone to play that flight simulator over and over again and without ever consciously thinking, "Oh, I need to put some pressure on the pedals this way when I'm taxiing straight". You just end up learning to do that. Your brain will incorporate that simply because it's a good simulation, a faithful simulation and there's some really interesting possibilities in the fields that we are looking at here of games allowing people to do that subconscious learning as well as of course the more conscious awareness: "Oh, I need to try A B and then C when I'm diagnosing the patient". Games can allow people to fail as we saw here, by trying the defibrillator instantly, and you kill the patient, when people were chuckling. The fact is that there's probably a better way for someone to learn not to do it than simply to tell them "don't ever do this". There's always that thing about the 5yr old being told don't ever open this or don't ever try that. There's this human instinct when you're forbidden to do something to see what would happen, and games allow us to do that even in cases even though actually it might result in catastrophe in the real world.

(Zyda)

Going back to your point to how you know when a player should do something or not, it goes back to the complexity of the game and how you should build that in. How would you do that in real life? How would a doctor teach a student about under what conditions would you do this thing v/s not, and you know you want to build that in and obviously one simple way is what we did is sort of like yes, no, and you'd get feed back. But if you're talking about something more complex like what Noah's saying where you have them experiment to learn whether long term helps or not help, you need a more complex system where they can really play around and experiment in the environment.

I am Mike Hitchcock. I am at the school of medicine at the University of Southern California and I work in medical education where we would love to have some of the products that we've been talking about today, and yet most of the gaming technology has been developed in private industry for a specific purpose, and I'm just wandering what is going to be an interface that's going to allow us to bring some of those technologies into the medical education world.

(Zyda)

I think, I know of one University that's very close to you that building a fairly substantial effort in serious games, and if you are interested in that, come over and talk.

(Unidentified)

My concern really is about the expense of that and my university doesn't have a budget for developing gaming technologies, and so it's going to be a constraint at least in the medical education where we don't have a grant program for that. Is that going to be developed in a few places like the school you were talking about? You write the right proposal, you meet the right person. My suggestion is that you think about the game you'd like to build, and you write a one pager that you circulate to people who know where the money is, you get funded and you go ahead and build it, you don't get funded you hand it off to students as a course project and maybe it will get funded over a long, long period of time.

(Noah)

One of the things I've been looking into on a non medical serious game project that is also aimed at the academic community is to try and form some coalitions that if one university may not be able to afford it, perhaps 3 together can, and there are obviously issues of competition and stuff, but often people have colleagues and trusted relationships and it becomes possible to work out some way of pulling your resources to share the results. I think that's actually going to become more and more accepted, as people see the advantages that it gives.

David Gaba

I'm David Gaba from Stanford. I'm the Associate Dean for Immersive and Simulation Based Learning, and I'd like to add my congratulations to SUMMIT and Parvati and LeRoy in pulling off this conference. My comment I guess relates to many of the issues that were brought up in the panel about the trade offs between complexity and realism and the choices in the game interface and so forth. If the games are going to be meaningful for anybody but the earliest learners who really don't know anything about what's going on, the choices and complexity have to be sufficient to enable people to do reasonable things and get reasonable results. And the truth is unlike Halo 2, or the other games, it's all a fantasy and there isn't a way to do it right except in the game world. Here we're trying to recreate a real world in which it is fuzzy and it isn't simple and if you over-simplify it too much which we saw there, then sure if you're a sophomore in high school maybe that's good. If you're a very early medical student or a nursing student, or a paramedic student maybe that's good, but if you get any higher than that, you don't sort of recreate the requisite varieties of the world to engage somebody who kind of knows what they are doing and that is a challenge for making games that can go beyond the earliest learning.

(Dick Moberg from Philadelphia)

I just want to go back to the earlier question right before David's in addressing some of the cost issues. You know SCORM is all about people developing content at multiple locations and sharing it by a standard. They are also developing a standard for simulations a high level architecture (HLA) and I'm wandering if any of the panelists know about sharable environments in simulations. Is that somehow that we can use to reduce the cost of development?

(Noah)

We talked about paradigm shifts and one of the things that I find is at odds between the way games people tend to work and the academic community tends to work is that because of the competitive nature of the entertainment market, we are always looking for unique ways to say by our game and not someone else's game and for that reason standards have always been almost anathema to game developers; not on some levels; we love the fact that at one point there were 3 or 4 different ways that you did sound and music on computers, and when that standardized that resolved a lot of headaches. But before it did, people were trying to specialize in one method or another and have the very best thing on the roll in sound card or the sound blast. From the games side of things, there maybe some resistance to that whole idea of coming up with a standard to simplify things because then someone else will say: Great, everyone else is going to go to the standard, we are going to do something that's clearly better than that standard and everyone will flock to us, and I think that open market competitive nature is a hard thing to work against.

Hi I'm Pamela Andreatta (University of Michigan Medical School. I'm an Assistant Professor in Medical Education and Director of the Clinical Simulation Center, and I wanted to continue on the discussion that our colleague from Stanford brought up associated mostly with using metaphor and using metaphor in instructing. And I think this is where the area between games for fun and serious games really come into play. One of the issues that you discussed was using the magnifying glass for example as the metaphor in going to check an airway. Well, in ACLS, you would not use a magnifying glass to go and check somebody's air way. Nor would you defibrillate over clothes and what am wondering is going back to what Carla talked about, which is looking at what are the implications, what are the actual aspects associated with the learning outcomes. And I'm wondering if you had any validation studies associated with using that type of training. How many people who've gone through that training then go and try to defibrillate over clothing.

(Brannon)

We developed it as supplemental education for them. So, it wasn't meant to be stand alone. Education there meant to use it in conjunction with their text book, in conjunction with lectures and things like that. So clearly it wasn't supposed to be the only source of that information. But no, we haven't actually seen them look into any research studies. But it clearly was presented that this was a fun way to practice a certain aspect of beginning to learn ACLS skills.

(Noah):

As a gamer I am the first to say that games are not the panacea to teach everything. They're very good at certain things, they're not so good at other things, and their terrible at other things, and just as you would not expect someone to become a physician simply reading books before they ever worked with real patients, neither would you expect that games would do the entire job. But they're very good at, giving you the sense of practicing those steps in an enjoyable and a safe way and to be able to try things because yes you wouldn't want to defibrillate somebody, cause him to 'flatline' but I want to throw in this very quick anecdote twenty -- twenty five years ago or so there was this game called *Space Shuttle* by Activation. When the shuttle was a brand new thing and this ran on the ATARI VCR so incredibly primitive game system that the cartridges had only 400 bytes for the entire program including all the graphics and everything and they tried to simulate the space shuttle using the system and they talked to the NASA people, got the figures, and then the course of the game is that things would go wrong with the shuttle – you'd try and deal with it. One of the things that went wrong in the testing was that one of the three main engines cut out partly into the launch sequence not right at the beginning, but when it was up pretty high and one of the people playing it turned on the little thrusters that was supposed to maneuver the space shuttle in orbit and use that as extra boost and managed to get into orbit. This was part of the kind of game

simulation that people in the game company looked at and said: “Well, the numbers seem to check out but there’s nothing from NASA that says that you can actually do that. They called NASA, explained what happened. NASA ran up through their big simulators down at Johnson and came back and said: “Thanks we’re gonna’ put this in the emergency manual because we never thought of trying that, but in fact you’re right. The numbers do work out and if you cut that in it is a way of getting up to orbit under those circumstances. The fact is that we will see that in medical games as well of things that people would never try because it would be dangerous or it’s not the kind of thing normally do but because in a game it normally works when in some cases may be using a defibrillator creatively, actually one chance in a thousand is actually is a very good thing to do. The game gives you a chance to find that out without killing the other 999 people along the way.

My name is Fitz McKenzie I’m from Reality Response. We make dismount effigies for the military. I’ve just a general question for the panel. We hear from our customers all the time: “Can you make your simulation play more like a game?” I was just wondering if you had some inside or just general comments for companies who are going the opposite direction and I know there’s a lot of focus on designing games for learning. We’re trying to get our simulation to keep up with the game industry because we’re taking our products and they’re putting it next to games and if you don’t understand beyond just the visuals you don’t understand what’s involved in creating a simulation you can say well I’d rather play this game than use this expensive simulator. Any comments on that?

(Brannon):

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